ENCLOSURE "C" to LEASE № xxxxx BY AND BETWEEN xxxxxxx, as LESSOR, and the STATE OF MICHIGAN for the DEPARTMENTS of ENVIRONMENTAL QUALITY and NATURAL RESOURCES, as LESSEES. Page 1 of 38.

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DIVISION 0 - INTRODUCTORY INFORMATION

0.1 Scope: It is the purpose of this outline specification to set forth the minimum general requirements for the completed facility as well as to clarify points of particular interest to the Lessee. Actual design, construction, and performance of the Leased premises, building systems, site and ground utilization, etc. are the responsibility of the Lessor. The Lessor shall obtain the services of an independent architect/engineer licensed to practice in Michigan to provide the construction drawings and specifications pursuant to the Lessee's requirements. The architect/engineer shall be responsible for presiding over and generating periodic progress meetings, minutes of meetings, and periodic on-site construction inspections to verify the provisions of the drawings and specifications.

0.2 The Lessor shall submit to the Department of Management and Budget, Office of Facilities, Real Estate Division (DMB), and the Lessee 3 sets of complete construction drawings and specifications bearing the seal of a licensed architect or engineer in the State of Michigan, for review and approval. While the approved drawings and specifications will become a part of the Lease, in the event there is a discrepancy between these outline specifications and the Lease, and the approved construction drawings, the outline specifications and the written Lease document shall prevail. The construction documents shall be approved by the Lessee before remodeling or new construction is started. Approval of these documents does not waive the Lessor's responsibility to comply with the provisions of the Lease and outline specifications.

Construction drawings shall include a complete set of mechanical, electrical, architectural, and site plans indicating boundary and/or topographic surveys, demolition, erosion plan, grading, lighting, utilities, building location, sidewalks, parking lot, drives, curbs, fences, signs, landscaping, and other site considerations. Construction specifications shall follow the AIA/CSI format and shall provide details and data not provided in the outline specifications. All design considerations shall be based on the Lessor's knowledge of the intended use of the Leased premises. The design and construction shall satisfy minimum LEED 2.1 certification requirements. The project shall be LEED registered prior to construction and certified within 2 years of construction. The Lessee's design or construction oversight staff shall include at least one LEED accredited professional within 6 months of the contract date. The Lessee's process of plans and specifications review and subsequent approval does not relieve the Lessor from any responsibility to provide an end product that is safe, comfortable and functionally satisfactory to serve as an office facility for the Lessee. **If there is any question on the intent of the discussed specifications, use the "Federal Guide for Green Construction Specs" on the Whole Building Design Guide website (www.wbdg.org) or the Leadership in Energy & Environmental Design rating system on the USGBC's website, as guides.**

The Leased premises shall be designed in such a manner as to insure an economical and efficient use of space, adequate natural light, ventilation, circulation patterns and code compliance. The Leased premises square footage shall be all adjacent on 1 level, with no other tenants interspersed or separating the Lessee's space.

*The **interior design philosophy** anticipates: A) all of the approx. 95 employees will be housed in systems furnishings cubicles, none of which will exceed 62" in height; B) typical sizes will range from 8' × 10' to 9' × 11'; C) no cubicles are intended to be located adjacent to exterior windows – a minimum perimeter clear corridor is intended; D) there will be 1 main entry point and seating area for the public, with necessary amenities for public use located within the main lobby (seating, male/female restrooms, drinking fountain, access to certain conference rooms); E) the main lobby will be segregated from the remainder of the Leased premises with floor-to-ceiling drywall partitioning; F) a central core area for employees-only restrooms, break room, conference rooms, library room, and an area for recycling paper, cardboard, glass and plastics, etc.; G) a mud-room for employees returning from field tasks for changing clothes and showering, which will be adjacent to the loading dock; H) an interior room near the loading dock with caged storage with a 72" opening (should be adjacent to rear loading dock); and I) 2 separate field samples preservation laboratories. The premises will be in full use during normal weekday business hours, but expect small numbers of employees to be present at any time during nights, weekends, or holidays, for special projects or to gear up for response to environmental emergencies, and hunting season demands.*

*The **environmental and infrastructure design philosophy**: A) All tenant work areas shall be built upon an 18" raised floor system of 24" × 24" modules; B) Restrooms, laboratories, showers, breakroom, and garage/storage area shall be slab-on-grade; C) The area set aside side for a heavy-load condensed filing system (approx 16' × 40' - supplied by tenant) shall be provided additional support stanchions to carry the system dead and live load; D) The underfloor plenum shall be used for the delivery of: i) all conditioned air within the premises, ii) all convenience electrical power, and iii) all low-voltage voice and data signal systems [computer, telephone, and alarm system]; E) the ceiling plenum shall be used solely for return-air, automatic sprinkler fire protection, and illumination circuits; and F) interior artificial illumination shall be delivered by suspended fixtures - no recessed or flush fixtures. The underfloor plenum [pressurized] shall be constructed airtight and moisture-proof with an appropriate coating or sealant to prevent exfiltration through the structural subfloor or perimeter vertical walls. The raised floor system performance standard is referenced in Division 13. **The garage/storage area shall be subdivided into 6 bays for**: A) wildlife use, B) fisheries use 1, C) fisheries use 2, D) fisheries use 3, E) law enforcement use, and F) environmental storage use.*

Sub-floor shall be level to 1/8" in 10' in any horizontal direction prior to the application of floor covering materials in the restrooms, laboratories, showers, and break room. The subfloors in the subdivided garage/storage areas shall be sloped to center floor drains, one in each bay.

The Leased premises shall meet the requirements for new construction (2006) with respect to floor load bearing capacity.

0.3 Definitions:

0.3.1 The term "product" includes materials, systems, and equipment.

0.3.2 The term "provide" includes furnishing and installing a product complete in place, tested and approved.

0.3.3 The term "building code" and the term "code" refer to regulations of government agencies having jurisdiction.

0.3.4 The terms "approved", "required", and "as directed" refer to and indicate the work or materials that may be approved, required, or directed by the Lessee.

0.3.5 The term "similar" means in its general sense and not necessarily identical.

0.3.6 The terms "shown", "indicated", "detailed", "noted", "scheduled" and terms of similar import refer to requirements contained in these specifications for the building or space being offered for Lease.

0.3.7 The term "Lessee" means the Michigan department of environmental quality, and the Michigan department of natural resources.

0.3.8 The term “systems furnishings” means interlocking components of portable and movable wall panels, writing surfaces, shelves, tackboards, drawers, power poles, etc. of varying sizes which are assembled to create separate work stations for each employee or each work function, that are owned by the Lessee, and are not normally attached to the Leased premises, except for electrical connection attachment.

0.3.9 Acronyms: AC (alternating electrical current); ACA (ammonical copper arsenite); ADA (Americans with Disabilities Act); a.f.f. (above finished floor); AFFF (aqueous film forming foam); ANSI (American National Standards Institute); ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers); ASME (American Society of Mechanical Engineers); ASTM (American Society for Testing and Materials); AWG (American Wire Gauge); AWI (Architectural Woodwork Institute); BEES (Building for Environmental and Economic Sustainability); BTU (British thermal unit); CCA (chromated copper arsenite); CCTV (Closed circuit television); CD-ROM (compact disk read only memory); CFC (chlorofluorocarbon); CFM (cubic feet per minute); CISCA (Ceiling and Interior Systems Construction Association); CPU (computer central processing unit); CRI (color rendering index); DDC (direct digital control); DX (direct expansion); DMB (Department of Management and Budget Real Estate Division); EPA (U.S. Environmental Protection Agency); FC (footcandles); FS (Federal Standard); HCFC (hydrochlorofluorocarbon); HVAC (heating ventilating and air conditioning); IQA (Indoor Air Quality Management Plan); ID (inside diameter); IEEE (International Electrical and Electronics Engineers); IES (Illuminating Engineering Society of North America); IGCC (Insulating Glass Certification Council); lbs (pounds); l.f. (lineal foot/feet); LEED (Leadership in Energy and Environmental Design); LR (light reflectance); MB (megabyte); MBC (Michigan Building Code or Michigan Mechanical Code or Michigan Plumbing Code, jointly or individually, current edition adopted by the state of Michigan); MDOT (Michigan Department of Transportation); MERV (Minimum Efficiency Reporting Value); MIOSHA (Michigan Occupational Safety and Health Act); NEC (National Electrical Code); NEMA (National Electrical Manufacturers Association); NFPA (National Fire Protection Association); NIC (not in contract); NIST (National Institute of Standards and Technology); NRC (noise reduction coefficient); OC (on center); O&M (operations and maintenance); PCB (polychlorinated biphenyl); PSI (pounds per square inch); PVC (polyvinyl chloride); RFQ (request for quotation); SCAQMD (South Coast Air Quality Management

District); SMACNA (Sheet Metal and Air Conditioning Contractors National Association); STC (sound transmission coefficient); TX (telecommunications); UL (Underwriter's Laboratories); USGBC (U.S. Green Building Council); VAV (variable air volume); VCP (visual comfort probability); VOC (volatile organic compound).

DIVISION 1 -GENERAL REQUIREMENTS

1.1 Regulatory requirements: Construct this Leased premises in accordance with all Federal, State and local building codes which includes MBC, MIOSHA, Life Safety Codes, Michigan Energy Code, and provisions for Public Law 93-112. The completed Leased premises and site must also comply with ADA requirements.

1.2 Encouraged Materials: Construction should utilize local and recycled or recyclable materials as much as practical. Material selection should consider immediate and long-term environmental impacts. An EPA software, "BEES" weighs the environmental and economic performance of building products and materials. See http://www.bfrl.nist.gov/oae/bees.html. See also http://www.bfrl.nist.gov/oae/bees.html.

5% of the total value of all building materials and products used in the project must be rapidly renewable building materials and products (made from plants that are typically harvested within a ten-year cycle or shorter).

The VOC content of adhesives and sealants used must be less than the current VOC content limits of SCAQMD Rule #1168, AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

Goal: Reduce design energy cost by 40% compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11 of the standard.

Goal: Supply at least 20% of the building's total energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy systems. Consider solar, wind, geothermal, biomass and other strategies. **This should be designed to support critical areas in the event of a power loss. If wind power is used, the issue of ice releases must be addressed. If geothermal energy is used, the potential for groundwater contamination from leaks must be addressed. If geothermal energy is used, considerations shall include the potential of heating sidewalks adjacent to the parking area to eliminate the need for salting the areas in the winter.**

Use materials with recycled content such that the sum of the post-consumer recycled content plus ½ the post-industrial content constitutes at least 5% of the total value of the materials in the project (mechanical and electrical components shall not be included).

Use a minimum of 20% of building materials and products that are manufactured within a radius of 500 miles of this project. Manufacturing refers to the final assembly of components into the final product that is installed by the tradesmen (e.g., if the hardware comes from Texas, the lumber from Canada and the final product is a joist made in Detroit, Michigan, then the location to determine distance is Detroit).

Achieve a minimum daylight factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks. **This includes the filing areas. In addition, achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces.** Spaces excluded from these requirements include restrooms, copy rooms, storage areas, mechanical plant rooms, and other low occupancy support areas. Other exceptions where tasks would be hindered by the use of daylight will be considered on merit.

Install continuous metering equipment for the following end-uses:

- Lighting systems and controls
- Constant and variable motor loads
- Variable frequency drive (VFD) operation
- Chiller efficiency at variable loads (kW/ton)
- Cooling load
- Air and water economizer and heat recovery cycles
- Air distribution static pressures and ventilation air volumes
- Boiler efficiencies (if boiler used)
- Building- –related process energy systems and equipment
- Indoor water risers and outdoor irrigation systems (if used)

and develop a measurement and verification plan that incorporates the monitoring information from the above end-uses and is consistent with Option B, C, or D of the 2001 *International Performance Measurement & Verification Protocol Volume I: Concepts and Options for Determining Energy and Water Savings.*

1.3 Prohibited materials: No equipment, material or finish shall contain: asbestos; CFC's; formaldehyde; HCFC; Halons; lead; PCB's.

1.4 Mercury: No material or finish shall contain mercury unless the use is approved by the Lessee in writing. Except for fluorescent lighting, the Lessor shall provide the Lessee a list of all equipment that contains mercury. This shall include electrical switches, thermostats, lift pumps, pilots, heaters, etc.

1.5 The Lessor or its representative shall obtain all necessary building, zoning, and other permits as required for the complete construction of the Leased premises.

1.6 Temporary facilities and controls, such as water, electricity, toilets, heating and telephone, are the responsibility of the Lessor.

1.7 Construction Recycling: Develop and implement a waste management plan for diverting at least 60% of construction, demolition and land clearing waste from landfill, by maintaining separate waste containers for metals, woods, concrete, drywall, and PVCs. The Lessor shall report the quantity of wastes generated with tabulation on the quantities land filled, recycled and/or reused at the end of the project.

1.8 Construction Deliveries: Develop and implement a delivery and haul-out plan to be used after structural steel is erected and during the construction process, that requires at least 50% of all vehicles delivering construction products and materials be used on the same trip to haul-out construction waste.

1.9 The Lessor shall provide a Leased premises project directory listing the following as applicable to the Leased premises, add other pertinent information if necessary. List by firm name, person in charge, address and telephone number: project name, owner (if different from Lessor), architect/engineer, and LEED accredited professionals, etc.

1.10 Prior to start of construction the Lessee shall be furnished free of charge, 3 copies of the final approved construction drawings and specifications. The Lessee may secure additional copies of final approved construction drawings and specifications from the Lessor at the usual charge for reproduction and handling.

1.11 Construction shall be done in strict accordance with approved plans and specifications. The Lessee reserves the right to make periodic inspections of the construction to ascertain whether construction and workmanship are as represented by approved drawings, and that the Leased premises is also representative of practices of construction that are reasonable and customary in the industry.

All existing buildings shall be structurally sound (certified by licensed structural engineer, if required by the Lessee), and meet all minimum design standards of this outline specification. Build into the floor plan layout all pipe chases and duct chases required to meet the mechanical design criteria, including vertical duct chases where low ceiling heights in existing buildings do not allow ventilation ducts above the ceiling.

To facilitate inspections of critical items, a certain reasonable number of **STOP POINTS** will be identified as required at a pre-construction meeting, to be chaired by an authorized representative of the Lessee. Construction of the item(s) to be inspected will not proceed until the Lessee has inspected and approved the work to that point. The Lessee must be given at least 2-day advance work days notice of when **STOP POINTS** will occur and inspection will be made within 2 business days after **STOP POINTS** are reached, otherwise, construction can proceed as planned. The pre-construction meeting will be called by the DMB and moderated by an authorized representative of the Office of Facilities.

Periodic site inspections will be made by the Lessee or by a licensed architect/engineer hired by the Lessee for this purpose. This does not relieve the Lessor from providing architect/engineer inspections during the construction phase.

If any materials or workmanship provided are other than as indicated on drawings, or specified, the Lessee may direct that the portion of the work that is not satisfactory be removed and replaced or otherwise corrected, at no additional cost to the Lessee.

Any reference to a specific brand and/or model is intended to establish quality, operating characteristics, size, or type. Products of equal or better quality, operating characteristics, or type are acceptable. However, the entire burden of establishing equality of alternate brands, types, sizes, etc., shall rest with the Lessor and the Lessor shall provide proof of "equal or better" upon request by the Lessee.

1.12 Within 10 days after the pre-construction meeting, the Lessor shall submit to the Lessee a construction progress schedule bar chart, a list of all subcontractors, and shop drawings and catalogues specified below. The construction progress schedule shall include the following:

A) The anticipated date of commencement and completion of the various operations to be performed under the Lease, including submission of samples and other information requiring prior approval of the Lessee, which directly controls the key operations.
B) The estimated time required for fabrication or delivery, or both, of controlling materials and equipment required for the work.

The construction progress schedule shall be predicated upon the completion of all the work on or before the date specified in the Lease. After being accepted by the Lessee as satisfactory, the construction progress schedule shall be strictly adhered to by the Lessor, subject to approved change order(s) to the Lease.

1.13 Regularly scheduled remodeling or construction progress meetings shall be held at the job-site or a mutually agreed upon location between the Lessor and the Lessee. The Lessor shall include general contractors and sub-contractors as necessary. A first meeting shall be held prior to commencement of actual remodeling or construction (pre-construction meeting referenced above) and held monthly thereafter until the Leased premises are completed. The meeting schedule may be altered when mutually agreeable between the Lessor and the Lessee. The Architect/Engineer retained by the Lessor shall record minutes of meetings and coordinate distribution of submittal, etc.

1.14 Prior to commencement of construction, the Lessor shall submit 2 copies of all shop drawings and manufacturers' catalogue information for all construction items proposed to the Lessee. These drawings shall include complete schedules for finishes, doors, floors, ceilings, hardware, plumbing fixtures and

accessories, HVAC equipment and accessories, etc. Shop drawings and manufacturer's catalogue information shall be checked and approved by the Lessor's Architect/Engineer.

Bi-weekly written construction progress reports and site inspection approvals shall be prepared by the Lessor's Architect/Engineer and copies submitted to the Lessee. Construction tests such as soil borings, concrete mix designs, and other pertinent field verifications shall be submitted to the Lessee prior to construction.

Upon substantial completion of construction and within 30 days of final acceptance, the Lessor shall submit to the Lessee the following: A) 1 copy of the complete final approved construction plans (architectural, structural, mechanical, civil, electrical, etc.) on CD-ROM(s) compatible with AutoDesk's AutoCAD® for Windows XP® software.

1.15 Any changes in construction requirements that occur after the final approval of design and construction documents shall be initiated by a field bulletin from the Lessor's Architect/Engineer requesting prices for changes proposed. Either the Lessor or the Lessee may make requests for changes consistent with Article III of the Lease.

Requests for a field bulletin change shall be complete with drawings and/or other supporting documentation.

The Lessor shall submit a detailed breakdown of costs to Lessee through DMB, after review and approval by the Lessor's Architect/Engineer.

DMB's Office of Facilities will review and recommend the adequacy of pricing only to DMB.

The Lessee will advise DMB in writing: A) if it wants the changes made, and B) that it has the funds to pay for the proposed changes.

All changes are to be included in the as-built drawings regardless of whether the request is initiated by the Lessor or by the Lessee and regardless of whether a cost is associated with the change.

All changes or deletions which result in a change of construction expense shall be provided on the basis of an itemized breakdown of the actual cost plus 15% for overhead and profit for work done by the Lessor or its general contractor. On work performed by a subcontractor, the Lessor or prime contractor is allowed a 5% handling charge. The subcontractor will then receive the 10% addition for overhead and profit.

Payment for such changes, additions or deletions shall be made as a lump-sum adjustment with the first monthly rental payment.

All change orders shall be issued in writing by the DMB, on a construction change order notice all as required by Article III of the Lease. The Lessor will be responsible for the cost of any unauthorized changes.

1.16 Contract close out: The Lessor shall notify the Lessee when the work will be substantially complete and ready for inspection and will prepare of a list of minor replacement, correction, adjustment, and touch-up items. All concerned parties shall attend the substantial completion inspection. The Lessor shall complete all work required by the date set for final acceptance by the Lessee. The Lessor shall provide a pest control application for the elimination and/or control of insects and rodents 1 week before the Lessee occupies.

1.17 The Lessor shall: A) remove from the Leased premises all surplus building material and rubbish, B) clean or reclean the entire work to normal level for "first class" maintenance/ cleaning of building projects of a similar nature, C) remove non-permanent protection and labels, D) polish glass, E) clean exposed finishes, F) touch up minor finish damage, G) clean or replace filters of mechanical systems, H)

remove debris and broom clean non-occupied spaces, J) sanitize plumbing/food service facilities, K) clean light fixtures and replace burned out/ dimmed lamps, L) sweep and wash new paved areas, M) police yards and grounds, and N) perform any other similar cleanup operations needed to produce a "clean" condition. No payments will be authorized until final cleanup is accomplished and an inspection is made by the Lessee.

1.18 Commissioning: A) Commissioning best practices shall be followed. This includes: A) engage a commissioning team that does not include individuals directly responsible for project design or construction management; B) review the design intent and the basis of design documentation; C) incorporate commissioning requirements into the construction documents; D) develop and utilize a commissioning plan; E) verify installation, functional performance, training and O&M documentation; and F) complete a commissioning report.

1.19 In addition to the fundamental commissioning prerequisite above, complete the following commissioning tasks: A) a commissioning authority independent of the design team shall conduct a review of the design prior to the construction documents phase; near completion of the construction document development; and prior to issuing the contract documents for construction; B) this authority shall review the contractor submittals relative to systems being commissioned; C) the Lessor and Lessee will be provided with a single manual that contains the information required for re-commissioning building systems; D) the Lessor and/or Lessee O&M staff will be trained in building operations; and E) all commissioning-related issues shall be resolved within 1 year after the construction completion date.

DIVISION 2 - SITE WORK

2.1 General:

The selected location shall not be: a) within prime farmland; b) less than 5 feet above the 100-year flood elevation; c) habitat for any threatened or endangered species. The site shall be within an existing development density of 30,000 square feet per acre or on a brownfield site **unless an exception is obtained**.

On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways and main utility branch trenches, and 25 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities and playing fields) that require additional staging areas in order to limit compaction in the constructed area; OR, on previously developed sites, restore a minimum of 50% of the site area (excluding the building footprint) by replacing impervious surfaces with native or adapted vegetation.

The landscaping shall be shown on the architectural site plan submitted to the Lessee for approval prior to remodeling or construction. Design landscape structures keeping in mind the likelihood of damage by powered snow removal equipment. Use hardy tree and shrub stock native or adapted to site complying with the recommendations and requirements of ANSI Z60.1. Design for low maintenance and low water requirements. Provide a temporary in-ground, frost free sprinkler system for lawn areas, as the means for proper application of water to planted areas during the 1st years rooting process. Protect planted areas against damage, including erosion and foot traffic, by providing and maintaining proper safeguards. Shrubs shall be grouped and located within shredded bark mulch beds. Remove the temporary in-ground irrigation system after the plantings have taken root at the end of the 2nd growing season.

Provide cyclone chain-link fencing to MDOT standards and installation methods, 84" high, with top rail, mid-rail and bottom rail, braced corner posts, to enclose a 15,000 square foot grassy area (75' × 200' dimensions if possible = approx 531 lineal feet) on the property. Gates shall be: a) a pair of 8'-wide gates - wide enough

to drive motor vehicle and trailer into grassy area, and b) a 3'-wide man-gate at the opposite end of the motor-vehicle gate - both shall be chain lockable. This fenced shall have curb-cut for motor vehicle access, and be adjacent to and 6' from the paved area designated for outdoor state-owned motor vehicle and boat storage.

Provide sufficient concrete sidewalks (5′ wide × 4" minimum thickness with wire mesh or fiber reinforcement on compacted sub-base) from parking area, for easy access to Leased premises.

Provide a reinforced concrete trash container pad and approach pad on a compacted sub-base (concrete as described in Division 3) on site for accommodation of the weight of trash pickup trucks during trash removal operations. Enclose pad in a masonry wall with cyclone fencing gates, to conceal the trash container without obstructing access by trash collection trucks.

For new construction, the Lessor shall obtain the services of a Soils Engineer to provide subsurface investigation of the building site, including standard penetration tests and soil analysis for toxic waste. Resultant data shall be given to the Lessor's architect/engineer for use in preparing the construction drawings and specifications. Copies of the reports shall also be provided to the Lessee prior to the Lessee's approval of the construction drawings. Comply with appropriate portions of “Standard Specifications for Construction” 1990 Edition of the MDOT.

Earthwork design shall provide positive drainage on the site. Slope all grades and exterior slabs away from building foundations. Where applicable, work shall conform to Act 347 of the Public Acts of 1972 (Soil Erosion and Sedimentation Act) as amended. Provide for controlled compaction of backfill which supports structure, parking, or walks according to ASTM D1557.

Exterior building street numbers, not less than 36" high with a minimum 5" wide stroke, shall be provided and installed above (or set in front of) any tree or plantings line to direct the public to this building from 2 opposing directions on main thoroughfares. Selection and locations shall be approved by the Lessee.

"Handicapped parking", "van accessible", "state vehicle only", and "no parking" signs shall be provided and installed prior to occupancy. Locations shall be confirmed by the Lessee on site plan as provided by the Lessor. Signs and installation shall be in compliance with MBC and ADA requirements.

Design a sediment and erosion control plan that conforms to federal, state, and local requirements for storm water management. The plan shall prevent loss of soil during construction; prevent sedimentation of storm sewers or receiving streams; and shall prevent polluting the air with dust and particulate matter. Where possible, this should be merged with the site's storm water management plan. The plan should result in a post-development 1.5 year/24hour peak discharge rate not exceeding the pre-development rate. The treatment provided should be designed to remove 80% of the average annual post-development total suspended solids and 40% of the total phosphorous from all storms less than or equal to the 2-year/24hour storm.

Temporary on-site irrigation shall be removed from the site after the 2nd growing season.

Employ strategies that, in aggregate, use **30%** less water than the water use baseline calculated for the building (not including irrigation).

For new construction, catch basin and storm sewer systems shall be provided in the parking lot according to local building code. Grade at perimeter of the building shall slope a minimum of 1" per foot for 8' measured perpendicular to the building. First floor line [the raised floor] shall be a minimum of 4" above grade adjacent to the building.

Provide accessibility to all entrances/exits for the physically handicapped.

All new site work shall be free of any toxic soil contamination.

The Lessor shall remove from the premises all surplus building material and rubbish, and dispose of it in a legal manner, per section 1.7 above. Burning on site is prohibited.

The building shall be placed on the site in such a manner as to allow a future expansion of at least 100' without the need of removing walks, drives, parking areas, etc.

Install 1 nonremovable bench and 1 cigarette disposal urn 25' away from 1 entrance.

2.2 Paving and surfacing: Provide asphaltic concrete paving or Portland cement concrete paving for motor vehicle parking for new construction and for unacceptable existing construction in accordance with referenced portions of "Standard Specifications for Construction" 1990 Edition of the MDOT.

Asphaltic concrete paving shall consist of:

A)	Sand-gravel sub-base:	Minimum 6" MDOT 22A
B)	Bond or tack coat asphalt emulsion:	MDOT SS-1h or MDOT MS-2a.
C)	Bituminous leveling course:	MDOT mixture 1100L
	Coarse aggregate:	20A
	Minimum thickness of leveling course:	3" (75 mm)
D)	Bituminous top course:	MDOT mixture 1300T
	Coarse aggregate:	20-AAA
	Minimum thickness of top course:	1½" (38 mm)

E) New bituminous pavement and existing bituminous pavement shall be prepared and sealed with a coal tar emulsion sealer. Application of sealant must be as recommended by the manufacturer, and performed upon initial delivery of the Leased premises and again 2 years after possession, and will require parking re-striping.

Portland cement concrete paving shall consist of:

F)	Minimum 6" sand-gravel sub-base:	MDOT 22A
G)	Reinforcement:	6" × 6" (W1.4) wire mesh
H)	Minimum compressive strength:	4,000 PSI in 28 days.
I)	Minimum cement content:	6 bags
J)	Minimum air-entrainment:	5%
K)	Maximum slump:	4"
L)	Minimum thickness:	5" depth

The parking lot shall be striped to designate "no parking" areas and to accommodate a minimum of 135 motor vehicles and the requisite number of handicapper spaces. The appropriate number of the handicapper spaces shall be "van accessible" as described in the ADA requirements. Paint all lines and stripes using 1 coat yellow or white Sherwin Williams "Pro-Mar Traffic Paint" as appropriate at a rate of 1 gallon for every 350 lineal feet of 4" wide stripe following Lessee's approval of the parking layout as provided by the Lessor.

Provide curbs, guardrails, curb cuts and wheel stops to meet MBC and ADA requirements, at reasonable access points to the sidewalks and building. Provide secure bicycle storage for 10 bicycles.

DIVISION 3 - CONCRETE

3.1 Cast In place concrete shall meet the following specifications: "Specification for Structural Concrete For Buildings", ACI 301, except as modified herein.

A) Cement: gray Portland cement conforming to ASTM C-150 Type 1.
B) Aggregate for all concrete: conform to ASTM C-33 lightweight aggregate.
C) Reinforcing steel: conform to ASTM A-615 Grade 60 and A-305.
D) Welded wire mesh: conform to ASTM A-185.
E) No admixtures containing calcium chloride shall be permitted.

All concrete shall have a minimum compressive strength of 3,500 PSI (for interior) and 4,000 PSI (for exterior) in 28 days except where noted, conforming to ASTM 39-83a. All concrete exposed to weathering shall be mixed with an air entraining type Portland cement or admixture. Air entraining admixtures shall conform to ASTM C-260.

For new construction, concrete slabs on grade shall be 4" thick with wire mesh or fiber reinforcing over a graded 4" sand bed, firmly compacted by mechanical means to insure a solid base with no voids or hollows. Provide a 6 mil (0.006") visqueen vapor barrier on the compacted sand base. Visqueen shall be lapped 6" minimum and taped at all seams. Pour slab uniformly on the vapor barrier.

Seal new floor slab against dusting using a first quality commercial sealer. Application of sealer must be as recommended by manufacturer and be low or no VOC.

DIVISION 4 - MASONRY

4.1 All concrete block shall conform to ASTM specification C-90, grade N-1, medium weight units for interior walls above grade and normal weight units below grade.

Solid load bearing stone aggregate concrete block shall be used for walls in contact with earth.

Hollow load bearing slag aggregate block shall be used in exterior walls for back-up.

Solid (no voids) load bearing stone or slag aggregate block, to match walls in which they are installed, shall be used to enclose columns, to build chases and recesses, and for certain bearing conditions.

All foundation walls below grade shall be poured reinforced concrete or concrete block with reinforcing.

4.2 All exterior walls shall be of face brick construction or similar durable, aesthetically attractive materials befitting of a government facility. 3 options for any such similar materials shall be submitted to the Lessee for selection and approval. The Lessee is under no obligation to accept similar alternates. Face brick shall be of modular size and of smooth texture meeting ASTM C216, Grade SW, Type FBX. The colors and design shall be approved by the Lessee. If pre-engineered metal framing is used, structural supports are to be enclosed within the exterior walls. Construction, mortar, joint reinforcement, and anchor and tie systems shall be in accordance with the Brick Institute of America and the Masonry Institute of Michigan standards and recommendations.

4.3 All mortar shall conform to ASTM C-476 and shall have a compressive strength of 1800 psi in 28 days.

4.4 Exterior masonry walls shall have control joints spaced at 30' maximum on centers. The exterior walls shall be designed to withstand a horizontal wind pressure of 20 lbs. per square foot for buildings of less than 30' in height.

4.5 Dampproofing: All above grade masonry to be damp proofed shall be thoroughly cleaned before the application of the finish sealant. Sealant shall be a non-silicone, clear penetrating saline compound equal to Hydrozo, Inc. "Environseal 40".

DIVISION 5 - METALS

5.1 Steel joists, if used, for new construction shall be as defined by the Steel Joist Institute. Bridging shall be diagonal and otherwise in accordance with the Steel Joist Institute specifications.

5.2 Structural steel rolled shapes, tubing and plates shall conform to ASTM A-36. Mill certificates shall be furnished by the Lessor.

5.3 Rolled steel shall conform to the ASTM standard specifications, Steel for Buildings, serial designation A195. Steel not otherwise specified shall be mild steel.

5.4 Miscellaneous:

A)	Anchor bolts:	conform to ASTM A-307.
B)	Connection bolts:	conform to ASTM A-325.
C)	Welding electrodes:	conform to ASTM A-233 Class E-70.
D)	Shop paint:	№ 769 damp proof red primer by Rust-Oleum.

5.5 Steel roof decking for new construction shall be 22 gauge, wide rib, 1½" deep, Vulcraft Type B, which is fabricated from ASTM A611-72 (1979), grade C cold-rolled structural quality sheet steel. Deck shall be phosphate coated and have manufacturer's standard prime painted finish.

5.6 Miscellaneous metal items shall use the best commercial quality for purpose of items specified, free of defects impairing strength, durability, finish or appearance. Materials shall be formed truly and uniformly to required shape, size, sharp lines, and smooth surfaces. Separate dissimilar materials with caulking, bituminous paint or gasket as approved.

DIVISION 6 - WOOD AND PLASTICS

6.1 Material standards (general):

A)	Sills:	Foundation grade, pressure-treated Southern Pine or Douglas Fir.
B)	Wood Studs:	Stud grade Southern Pine or Douglas Fir.
C)	Steel Studs:	22 gauge galvanized screw studs with 22 gauge track top and bottom.
D)	Posts and Beams:	Southern Pine № 1 Dense KD 2050 for Douglas Fir Select Structural 1900f.
E)	Concealed Sheathing:	Standard exterior grade with exterior glue APA CCX, plywood or OSB.
F)	Composite Woods	All composite wood and agri-fiber products shall contain NO added urea-formaldehyde resins.
G)	Wood Preservative:	ACA for Douglas Fir or CCA for Southern Pine.
H)	Wood based products	A minimum of 50% the wood based products and materials must be certified in accordance with the Forest Stewardship Council's Principles and Criteria, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, and non-rented

temporary construction applications such as bracing, concrete form work and pedestrian barriers. Provide a list of these materials and certificate numbers, upon request.

6.2 Cabinet Work: Provide a minimum of 12 l.f. of base kitchen cabinetry with plastic laminate finished counter top with 4" preformed backsplash for the employee break room. Provide 6 l.f. of double door wall cabinets over counter or a single 30" wide pantry cabinet in employee break room. Countertop laminate color shall be Lessee choice. The counter face shall be finished at the floor with a suitable heavy duty vinyl or wood base board. All millwork and installation shall conform to the performance standards of the Architectural Millwork Institute. Finish wood materials to receive stain or transparent finish shall be "Custom" grade. Laminated plastic shall be high pressure plastic laminate complying with NEMA standard specifications for General Purpose Grade (HGS/Grade-10 .050") with selection from solid colors or wood grains. Casework hardware shall be equal to Knape & Vogt Manufacturing co. products. Cabinet work shall be white laminate. All cabinet work elevations, widths, and depths shall meet MBC and ADA requirements for residential handicapper accessibility. Cabinets shall be complete with hardware, drawers, dividers, and adjustable shelves. Drawers shall be suspended on steel slides with ball bearing type nylon rollers for ease of operation. Drawer slides shall have a 100 lb. load rating.

6.3 Provide a 12" × 36" plastic laminated shelf in each employees toilet room near the exit no higher than 40" from the floor, capable of holding not less than 50 lbs.

6.4 Provide 2" × 10" wood blocking in wall cavities where door swing motion could cause door hardware lever to pierce drywall, for installation of wall-mounted door-stops. No floor-mounted or baseboard-mounted door-stops.

6.5 Provide 3 4' × 8' × ¾" equipment backboards for use in the telephone and data closet, each finished with 2 coats of white enamel, secured to the wall to hold the load intended.

6.6 Furnish all necessary nails and screws and all items generally classed as "rough hardware" including bolts, washers, anchors, straps, etc. that are required for proper assembly.

6.7 Wood trusses for gabled or shed roofs, shall be prefabricated and engineered, and include bridging, bracing, and anchorage. The manufacturer shall be a company specializing in manufacture of prefabricated wood trusses with 3 years minimum experience. Trusses shall be designed under direct supervision of professional engineer licensed to practice in State of Michigan. Shop drawings shall be sealed. Pitch of trusses shall be 4/12 or greater. Trusses shall be installed on maximum 24" centers.

DIVISION 7 - THERMAL AND MOISTURE CONTROL

7.1 Performance and submittals:

The exterior wall from floor-to-roof deck shall have an R-factor of 19 or greater. The roof system shall have an R-factor of 30 or greater. The rest of the building envelope and systems shall meet or exceed the requirements of ASHRAE 90.1-1999. An analysis of the exterior building envelope showing construction materials and methods of assembly and coefficients of transmission (U/BTU/h ftºF) demonstrating compliance with this specification shall be submitted to the Lessee prior to construction. **STOP POINT**: The Lessee shall be given 48 hour advance notification to conduct an on-site inspection after insulation is installed and before the wall finish is started. An inspection will be made by the Lessee within 2 business days of receipt of notification. Prior to the start of construction on a new building, submit architectural and construction documents to the Lessee showing details for proposed roof construction, weatherproofing and waterproofing, with proposed method of sealing all roof penetrations. All roof cuts or penetrations shall be made and sealed by the roofing subcontractor on both new and existing buildings. Existing buildings may

require a tear-off and similar roof details.

7.2 **STOP POINT**: For new construction, the floor slab/foundation shall have Dow “Styrofoam SM” 2” × 24” rigid insulation installed vertically at the interior face of all exterior walls and extend horizontally 24” beneath the floor slab. The Lessee is to be given 48 hour advance notification to conduct an on-site inspection after insulation is installed and before the floor slab is poured. The inspection will be made by the Lessee within 2 business days of receipt of notification.

7.3 Wall Insulation

Batt insulation for exterior walls of the building shall be mineral or glass fiber conforming to Federal specifications HH-I-S21 and ASTM C665. Flame spread shall not exceed 25, ASTM E84. Batts shall be rated at R-11 or better.

Provide a sound transmission coefficient of not less than 45 in all floor-to-ceiling interior walls and horizontal acoustic grid ceilings that enclose private offices, conference rooms, break rooms, libraries, and rest rooms - to accomplish this, said walls may have to extend a minimum 12" above the drop ceiling. **STOP POINT**: The Lessee is to be given at least a 48 hour advance notification to conduct an on-site inspection after insulation is installed and before the wall finish process is started. An inspection will be made by the Lessee within 2 business days of receipt of notification. Sound attenuation batt insulation for interior walls shall be 3” thick, United State Gypsum Thermafiber conforming to ASTM C655, and Federal Specification HH-1-521E, Type I or II or approved equal.

7.4 For new construction and re-roofing, all deck insulation shall be isocyanurate rigid foam insulation with aluminum foil or fiberglass facers which meets Federal Specification HH-I-1972/1 and Factory Mutual Report Serial No. J.I. OG4A7.AM. Tapered isocyanurate rigid foam insulation board shall provide a minimum slope of 1" per foot. All insulation board shall be installed in compliance with the latest manufacturer's written instructions.

7.5 Roof Construction:

Use ENERGY STAR® compliant (highly reflective) AND high emissivity roofing (emissivity of at least 0.9 when tested in accordance with ASTM 408) for a minimum of 75% of the roof surface; OR install a “green” (vegetated) roof for at least 50% of the roof area. Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area.

Low-slope roof design: For new construction, provide a four ply, coal tar bitumen, build-up roofing system by the Koppers Co., Inc. with a 20-year Classic guarantee for all materials and labor. For low-slope roof design over 2” per foot on existing buildings, provide a 2-ply modified bitumen sheet roofing system, SBS Base/SBS Premium, by Firestone Building Products Co., with manufacturers 15 year total system warranty for all materials and labor. Minimum total thickness shall be 230 mils. Base sheet shall be a minimum of 80 mils. Top surfacing shall have continuous layer of white mineral granules and minimum thickness of 130 mils.

A prefinished standing seam metal roofing or similar roofing material shall be used on sloped roofs and must meet the standards for a 20-year warranted system. Color shall be selected by Lessee.

7.6 Provide an interior ladder access and a metal roof scuttle, type "S-20" as manufactured by the Bilco co. to flat or low slope roof areas, if any. Also provide Bilco "Ladder Up" safety post. Secure to top 2 rungs of the ladder. Roof scuttle shall be located at the top of a stairshaft tower if multi-story.

7.7 Butyl rubber caulking compound for exterior use shall be 1 part polymerized rubber compound, gun consistency, conforming to Federal Specification TT-C-598 Grade 1.

Acrylic caulking compound for interior use shall be 1 part, 100% liquid polymer, acrylic base compound, non-sagging, non-staining, gun consistency.

Polysulfide base compound for exterior use shall be a 1 component sealing compound complying with the requirements of USIA A116.1, Class B (non-sagging) and Federal Specification TT-S227B, Types I and II. Containers shall bear the Thiokol Chemical corp. "Tested and Approved" seal or shall be accompanied by a manufacturer's certificate stating that the compound complies with this standard.

DIVISION 8 - DOORS AND WINDOWS

8.1 Doors and frames at the main entrance shall be aluminum entrances or storefront material with thermal break equal to systems designed and engineered by Kawneer Co., Inc. or Tubelite Division, Indal, Inc. Finish is to be dark bronze (M10-C22-A44). All exterior pedestrian door frames and those door frames of adjacent air lock vestibules shall be constructed to accept electric strike hardware (for swipe or proximity card access system), and prepped for intrusion alarm system contacts. Loading dock doors and frames shall be prepped for intrusion alarm system contacts.

All exterior doors and frames, except at main entrance, shall be custom hollow metal construction provided with heavy duty commercial grade hardware. The main entrance shall be 2 pairs of 36" doors arranged to create an air lock vestibule. Door face sheets shall be commercial quality, roller leveled, cold roll, 16 gauge steel with 18 gauge stiffeners at 6" on center. Provide polystyrene or urethane insulation core filler. All exposed steel surfaces shall be cleaned, bonded and coated with a baked on zinc chromate based prime paint. Frames shall be prefabricated combination buck, frame, and trim type. Mitered joints shall have locking tabs at frame rabbets and backboards. All interior door frames shall be furnished with rubber bumpers. Provide 14 gauge door frames for exterior openings and 16 gauge door frames for interior openings. Reinforce, drill, and tap doors and frames for fully-templated mortised and concealed hardware. Delivery door opening is to be not less than 72" wide. The main entry and airlock vestibule door opening shall allow for a 72" wide clear opening, and all other doors are to be 36" wide.

All exterior doors shall be weather-stripped, have a commercial quality aluminum threshold of low profile (beveled) design not to exceed 2” high. Bevel angle shall not exceed 30^0. Main entry door point shall be protected from rainwater and snow by a canopy. Other exterior doors shall be protected from water by metal flashing over the door heads.

Provide an eye level peephole at each man-door adjacent to each overhead garage door at the Garage / Storage area. Provide a doorbell push-button at the environmental storage area delivery door with the bell located in leased premises where directed by Lessee.

8.2 All interior doors shall be 1¾“ thick, commercial grade, solid core, wood construction, stained and varnished. Face veneer shall be selected grade red oak of standard commercial thickness not less than 1/28" before sanding. Doors and frames shall bear UL labels as required by code. All interior doors shall be equipped with 6" wide × 24" high window openings and glazing (wired glazing if required by building code). **Provide an allowance of 1 3'-0" × 7'-0" door for each 25 lineal feet of interior gypsum board partitioning.**

8.3 At the main lobby interior door and frame, between the office area and the waiting area, provide an electric strike release, to “buzz” visitors into the office area.

8.4 Provide window openings around at least 3 sides of the perimeter of the Leased premises, on each floor level above grade, of at least 33% of the wall surface to be glazing to admit natural light.

Windows shall be heavy commercial, prime windows with thermal break construction, as defined by the American Architectural Manufacturers Association, Publications GS-001 and 101. Window designation shall be HC-40 at exterior locations. Provide all window components, and installation accessories. Finish shall be dark bronze (M10-C22-A44).

Metal windows shall be Custom Window, Series 8500; EFCO Corp., Series 2700; Modu-Line Windows, Inc., Series 225; or Peerless, Inc., Series 1600.

8.5 Glazing: All exterior windows shall have sealed, low emissivity, insulating glass units which are manufactured by members of SIGMA and IGCC. Sealed insulating glass shall meet ASTM E774, Class B. Glass shall be hermetically dual sealed, inert gas filled, double pane units with exterior 3/16" bronze float glass (loE on second surface), ½" air space, and interior 3/16" clear float glass. Insulated panels, if used, shall be 1" laminated panels equal to Mapes Industries architectural panels with a porcelain fused-on finish.

Wired or clear fire-rated glass shall be UL approved. Safety glass shall be tempered or laminated, and shall meet ANSI Z97.1 standard.

8.6 At the main lobby provide two separated cased-out visitor's window, at barrier free height, not less than 48" wide, with no ledge on the office side, but with a 16" ledge on the lobby side. Ledge shall be suitably braced to hold at least 100 lbs. force vertically applied at the outer edge. Provide a vertical rising rolling shutter across the window opening. Finish shall be brushed aluminum. Shutter shall be lockable from the office side, and raised or lowered by a built-in electric motor, with manual override.

8.7 Hardware shall conform to applicable requirements of the local building code, and for fire rated doors and frames, with appropriate sections of Chapter 5 of NFPA 101. Hardware shall be made to blueprint template and be furnished to door and frame manufacturer. Hardware shall be supplied through an architectural hardware consultant to properly handle, detail, and service hardware in a satisfactory manner. Hinges shall be provided with stainless steel pins, oil impregnated bronze bushings, and concealed ball bearing units. Swing out doors shall have nonremovable pins.

Locksets shall be heavy-duty cylindrical type with a minimum 2" backset and 9/16" throw latchbolt. All lock cylinders shall be Best Lock Corp., "9K Varsity Series", or approved equal, and must be designed or protected so they cannot be grasped by any wrenching device. All door handles shall be of heavy duty lever type, except to hazardous areas. Doors to hazardous areas such as the telephone/data equipment room, the janitor closet, and electrical closets have knurled knobs. Knobs shall be brushed stainless steel finish, and be a minimum of .050" thick. Cylinder cores and 2 keys per lock shall be provided by the Lessor.

Door stops shall be wall-mounted with blocking, per division 6.

Exit devices shall be steel (dull chrome US26D finish), and be UL approved. Devices required on fire-rated doors shall be UL listed as fire exit hardware. Outside trim shall be fastened by means of concealed lugs and through-bolts to the active case.

All exterior doors shall be equipped with closers. Door closers shall have key valves for back check, speed, and latching. Degree of opening shall be maximum possible without causing interference or damage to door or trim. Closers shall be lockable in the full-open position. Closers shall be fastened to doors with sex bolts.

Hinged exterior doors, except fire doors, shall require no more than 8 lbs. of force for opening or closing. Fire doors shall have the minimum opening force required by the fire marshal.

Main entry doors (exterior door and inner door if a vestibule assembly) shall be equipped with Gyro Tech System 500 electric push button operators for the handicapped. Operator push switch plates shall be of 6"

diameter with embossed wheelchair symbol.

Exterior EXIT doors other than main entrance, employee entrance, and receiving doors shall have audible alarm-type hardware.

Double doors at receiving room (interior doors or exterior doors) shall be equipped with a tamper-proof astragal, and have vertical dead bolts at top and bottom of each door (verify fire marshal requirements).

All lockable interior doors shall be master keyed with the exterior doors. A keying plan for interior door locks will be furnished by the Lessee. Lessor shall supply 2 keys per lock, and 2 master keys.

All toilet room doors shall be provided with door closers and ball bearing type hinges. All mechanical door closers on interior doors shall be operated by a maximum lateral force of 5 lbs. pressure as measured at the door handle or push plate.

Provide and install construction locks in cylinder cores on all exterior doors. Convert to cores for tenant use after building control has been turned over to the Lessee.

8.8 All code-required fire separation doors in a horizontal means of egress within the Leased premises shall be equipped with magnetic hold-open devices interwired with the building's fire alarm system (or adjacent smoke detection system as code allows), to close to the latched condition: A) upon the activation of the fire alarm system, or B) on a timer established with the software of the intrusion alarm system CPU, or C) a power failure.

8.9 All openable exterior windows shall be provided with removable (by the occupant) woven wire mesh insect screens, same color as window frames; include a supply of 10% spares upon completion of project.

8.10 The indoor garage/storage space shall be compartmented off into six areas and shall have exterior access by 15 (fifteen) 12'-wide × 14'-high vertical rolling sectional doors, each with appropriately sized electric lift motors, up-down-stop switches by each door, manual override chain raise capability, 4" × 12" viewing window in one section of each door at approx 60" above floor, and be bolt-and-padlock lockable (interior side). Doors shall be insulated and made of commercial-grade materials.

8.11 The indoor garage/storage space shall require a man-entry door between each pair of vertical rolling sectional doors. The compartmented areas referenced in 8.10 shall have man-doors for access between 3 of the compartments.

DIVISION 9 - FINISHES

9.1 Ceiling systems must conform to fire, acoustics, maintenance and light reflection requirements. Acoustical panel ceilings shall comply with ASTM E1264 Classifications and metal suspension systems with applicable ASTM C635 requirements. Suspend lighting fixtures independent of ceiling. Provide edge moldings, trim and acoustical sealant as required. Exposed face shall be white enamel. Grid spacing shall be 24" × 48" throughout, except for: A) all conference rooms, and B) main entrance lobby, which shall be 24" × 24".

Lay in panels shall have an NRC range of .55 to .65, STC range of 35-39, light reflectance of LR-1, flame spread of 0-25 (ASTM E84) and nominal size of 24" × 48" × ¾". Lay in panels shall be scored or otherwise constructed to give the appearance of individual 24" × 24" panels in place. The minimum ceiling height shall be 9' nominal except in small rooms or limited areas which may be 8' nominal.

Provide unfaced mineral-fiber sound attenuation blankets over ceiling systems where required to meet room

to room sound transmission requirements.

The VOC content of adhesives and sealants used must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168, AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

The Lessor shall document: a) attempts to, or b) the recycling of, all acoustical ceiling tiles wasted by this project.

9.2 Wall Systems:

All interior walls, except restrooms, shall be painted or field applied vinyl covered 5/8" gypsum board. Vinyl fabric shall be medium weight, textured, wall covering with stain resistant surface coatings. 4" vinyl base shall be applied to all walls. Metal studs, floor and ceiling track shall be 20 gauge galvanized steel spaced at 16" o.c. (24" o.c. not acceptable). Gypsum board fasteners shall be drywall screws not less than 1¼" long. Painted surfaces shall receive 1 coat of primer and 2 coats of finish. A complete room finish schedule shall be submitted for approval by the Lessee prior to construction. Colors shall be selected by the Lessee. Provide clear plastic guards up to 48" a.f.f. on all interior outside corners to protect vinyl wall covering. **Gypsum drywall partitioning allowance: provide 1 lineal foot of gypsum drywall partition (finished on each side) for each 25 square feet of space rented referenced in Article I of the Lease.**

Exterior wall insulation is to be covered from floor to roof deck with ½" gypsum board. Gypsum board above the acoustic ceiling line may be unfinished.

Walls in restrooms shall be finished with glazed wall tile extending from floor to 60" a.f.f. Tile shall be standard grade meeting ANSI 137.1.

Walls separating the garage storage compartments shall be concrete block to 96" a.f.f., with metal studs and drywall above.

9.3 Floor Systems:

Design to minimize pollutant cross-contamination of regularly occupied areas: Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways and the field staff entry.

At least 75% of all carpet removed during construction shall be recycled.

Carpeting is to be used throughout except as otherwise identified below. All carpet shall be: a) "Guardian Plus" by Collins and Aikman, or b) Shaw's ""Ecosolution Q"" (note: this has a minimum 25% recycled content), or c) Interface's Sabi, or d) Prairie School (note-these have a minimum 36% recycled content), and be anti-static, commercial grade carpet tile in 18" × 18" modules. Adhesive shall be C-14 pressure sensitive by Collins and Aikman, or equal. Carpeting meeting these specifications is also available through the Lessee's contracts. Complete specifications of any substitutes must be submitted to the Lessee prior to construction, and must meet the following minimums:

A)	Construction	Level loop
B)	Pitch	351
C)	Pile units per inch	10
D)	Pile units per sq. inch	130
E)	Pile height average	.135"

F) Face yarn weight 20 oz.
G) Yarn size 1245/2
H) Fiber content 100% CF Antron nylon with static control

The carpet purchased must meet or exceed the requirements of the Carpet & Rug Institute's Green Label Indoor Air Quality Test Program; contain a minimum of 25% recycled content; contain no formaldehyde or styrene; and be recyclable. **All adhesives used must satisfy voc requirements of section 9.1 above.**

All toilet room floors shall be slip resistant ceramic mosaic tile with sanitary cove base. Provide all special shapes required for 1-piece inside and outside corners. Tile in new buildings shall be applied using the "mud-set" method. Tile shall meet ANSI 137.1.

Vestibule floors at main and employee entrances shall be finished with quarry tile pavers. Tile shall be product of "American Olean" or "Summitville Quarry Tile". Provide 6" × 6" × 2" base.

Break room and mud-room shall be VCT with 4" vinyl cove base.

Caged storage area shall be sealed concrete, with 4" vinyl cove base.

Rubber floor tile by Endura, series .130, round profile, with a 10 year warranty shall be used in the following areas: janitor closet, and any area where there is a change in interior elevation by ramp or stairs, which shall be located in the 24" perpendicular to the top elevation, across the width of the top step or top of ramp. Rubber wall base products shall comply with FS SS-W-40, Type 1. Colors shall be selected by the Lessee.

The garage storage area compartments shall be cleaned and have 2 costs of oil-base sealant prior to occupancy, to reduce dust generation.

9.4 Painting:

All exterior surfaces and materials above grade requiring paint shall be prime coated plus 2 coats of Sherwin Williams Pro-Mar alkyd flat exterior finish, or Sherwin-Williams SWP exterior gloss paint.

All porous exterior surfaces (e.g. unpainted wood) shall be sealed with 2 coats of Thompson's Water Seal following the manufacturers application instructions.

Interior surfaces requiring paint shall be prime coated plus 2 coats of Sherwin Williams Harmony Latex Eg-Shel Enamel. Concrete block walls shall receive 1 coat of Sherwin Williams Pro-Mar Block Filler and 2 coats of Sherwin Williams Harmony Latex Eg-Shel Enamel.

Interior and exterior finishes and color selections shall be approved by the Lessee. A schedule of colors and finishes shall be prepared by the Lessor and approved by the Lessee.

All paints, sealants, coatings, or primers used in the project must be low-emitting (low or no VOC) materials. VOC emissions from paints and coatings must not exceed the VOC and chemical component limits of Green Seal's Standard GS-11 requirements.

The 96" concrete block walls in the garage storage area compartments shall be painted with 2 coats of oil-based enamel white paint, commercial grade, hard-use, wet-applications, designed for use on concrete block surfaces.

9.5 Provide 20 lineal feet, applied continually between 36" a.f.f. and 84" a.f.f., of self-healing tackable wall surface on the gypsum drywall board wall in the main conference room. Material shall be cuttable and glue-

on. Cork or fabric-covered tack surfaces not acceptable.

9.6 Ledge for receptionist window in main lobby shall be finished in suitable high pressure plastic laminate material.

9.7 Finishes in employee shower stalls shall be ceramic tile on walls up to 7'

DIVISION 10 - SPECIALTIES

10.1 Toilet Compartments

Provide and install 72" high powder coated, stainless steel, or plastic, floor mounted, and overhead braced toilet privacy partitions in restrooms. Doors and partitions shall be flush type 1" thick. Partition panels shall be fastened to walls with tamper resistant toggle bolts, expansion bolts and inserts of approved design. All partition layouts shall comply with the ADA and MBC requirements.

10.2 Furnish a main lobby building directory and suite identification signs consistent with the decor of the building, indicating the Lessee as a tenant. The Lessee shall furnish and install its own interior office and cubicle signage (unless the Lessor prefers otherwise, in which case such signage shall be at the Lessor's expense).

10.3 deleted.

10.4 Provide the following restroom and lunch room accessories. Model numbers are taken from the Bobrick Washroom Equipment, Inc. catalog (www.bobrick.com):

A) Toilet tissue dispenser № B-2892. Provide 1 in each restroom privacy stall.
B) deleted.
C) Napkin disposal № B-354, partition mounted. Provide 1 in each woman's restroom privacy stall.
D) Soap dispenser № B-2112, wall mounted. Provide 1 for each restroom lavatory.
E) Paper towel dispenser № B-262, surface mounted. Provide 1 in each restroom, and 1 in the break room.
F) Grab bars № B-68137, concealed mounting. Provide 1 for each handicapper accessible restroom privacy stall.
G) deleted.
H) deleted.
I) Framed mirror № B-290, wall mounted on concealed hangers, 24" × 36". Provide 1 over each restroom lavatory.

10.5 deleted.

10.6 deleted.

10.7 Provide UL-listed fire extinguishers, cabinets and accessories from a single manufacturer such as J.L. Industries or Larsen's Manufacturing Co. that comply with authorities having jurisdiction. Extinguishers shall be minimum 2A:10BC refillable multipurpose dry chemical. Provide aluminum cabinets with clear anodic coating.

DIVISION 11 - EQUIPMENT

11.1 Provide a shipping and receiving point into the Leased premises, separate from the main entry point that provides for a minimum 96" wide × 84" high exterior opening. The shipping and receiving entry point shall be ramped if necessary to allow for uninterrupted wheeled cart access into Leased premises. Ramp

slopes shall meet ADA requirements and be made of same material as outdoor surfaces (concrete or bituminous) – no wood or steel plate curb ramps allowed.

11.2 deleted.

11.3 deleted.

11.4 Provide an indoor annunciator bell and an outdoor push button switch adjacent to truck and service doors, for purposes of notifying state employee in vicinity of loading dock that a delivery is pending.

DIVISION 12 - FURNISHINGS

12.1 Systems furnishings will be supplied and installed by the Lessee. It will be the Lessor's responsibility to complete the electrical connections from the underfloor electrical grid to the power base feeds for the systems furnishings that serve multiple cubicles (see Division 16).

12.2 If the Leased premises are new construction, provide and install commercial quality, recessed floor mats and frames at vestibules. Floor mats shall be recycled-content manufactured by Earth Safe, Inc., Durable Corporation, or approved equal.

12.3 All exterior glazing (except main entry doors) shall be equipped with vertical blinds. The slats are to be 3” wide vinyl. Blinds shall have 180º rotation and full retract for the flexible adjustment of light intensity. They shall be easy to maintain and repair, and shall conform to interior office design and colors. Interior glazing partition walls, including vestibules (but not systems furnishings glazed panels) will require the same window treatment. Locations will be identified by the Lessee. Color selection by the Lessee.

DIVISION 13 - SPECIAL CONSTRUCTION

13.1 Provide a 10' × 15' enclosed environmental laboratory area separate from 13.3 below. The environmental laboratory shall be used for the temporary holding, preservation, and packaging of field water and soil samples, and unidentified liquids and solids as collected by field staff, for shipment to and analysis at the Lessee's Joint Laboratory in Lansing. Laboratory will use dilutions of nitric acid to clean glassware samples containers, and thus requires countertops, sinks, backsplashes, exhaust hood, and drain assemblies to resist the effects of a 90%-water 10%-nitric acid diluted solution. This section is referenced elsewhere in plumbing and mechanical. Room must be served by negative pressure conditioned air.

13.2 Garage / Storage area 1: Provide a 25' × 60' enclosed wildlife area. The wildlife area shall be used for the acceptance of animal specimens delivered by the public. The wildlife area will require domestic water (two ½″ outlets), two 12' × 14' overhead doors [referenced in Division 8], and 1 exterior man-door adjacent to each overhead door. Area must be served by baseboard hot water heat - no summer cooling.

13.3 Garage / Storage area 2:

a) Provide a 16' × 30' enclosed fisheries laboratory area separate from 13.1 above. The fisheries laboratory shall be used for cleaning, and the temporary holding, preservation, and packaging of aquatic samples as collected by field staff. The fisheries laboratory will require a hood vented to the outdoors, piped-in compressed air (2 outlets), domestic water (two ½″ outlets), a pair of stainless steel sinks with attached 48" sloped stainless countertops with 24" high stainless backsplash for fish cleaning. Room must be served by conditioned air.

b) Provide a 50' × 60' enclosed fisheries shop in the garage/storage area which shall be outfitted with piped-in compressed air [at 2 separate locations], a commercial-grade central dust collection system

with 2 outlets and a 40-foot removable hose section [woodworking], a commercial-grade fume exhaust hood for minor welding operations [equipment repair], and an emergency shower and eyewash station. This area must have a pair of 12' × 14' overhead doors [referenced in Division 8]. Room must be served by baseboard hot water heat - no summer cooling.

c) Provide a 30' × 60' enclosed fisheries storage area with piped-in compressed air [at 2 separate locations], domestic water (two ½″ outlets, with isolation and drain valves to prevent freezing). This area must have a pair of 12' × 14' overhead doors [referenced in Division 8]. Room is considered cold storage: no conditioned air required.

d) Provide a 45' × 60' fisheries storage area with piped-in compressed air [at 2 separate locations], domestic water (two ½″ outlets). This area must have three 12' × 14' overhead doors [referenced in Division 8]. Room must be served by baseboard hot water heat - no summer cooling.

13.4 Garage / Storage area 3: Provide a 60' × 100' enclosed law enforcement storage area. This area must have five 12' × 14' overhead doors [referenced in Division 8], with man-door adjacent between each pair of overhead doors. Room must be served by baseboard hot water heat - no summer cooling. Within this area construct a separate 10' × 15' concrete block secured room that shall be used for the storage of wildlife criminal evidence and ordnance, which shall be intrusion resistant at deck, ceiling, all four sides, doorframe, and door.

13.5 The compressed air piping required in the Garage / Storage area above shall be served by 1 tenant-supplied air compressor. Compressor installed by tenant.

13.6 Garage / Storage area rooms in 13.3 shall be interconnected internally by 36"-wide door openings with doors.

13.7 The main conference room shall be furnished with 2 moveable wall systems of equivalent performance to Hufcor (www.hufcor.com) Classic Series Operable 7000, with a minimum STC of 45. One unit at approx 38 lineal feet, and the other unit at approx 25 lineal feet. The Lessor shall assure adequate structural steel is provided to suspend this type of wall system. Provide dry-marker boards on 10 of the wall panels where designated by the Lessee. Dry-marker boards shall be designed and engineered (integral to) the wall system when the walls are in the retracted (stored) position. Provide tack surfaces on 10 of the wall panels where designated by the Lessee. Tack surfaces boards shall be designed and engineered (integral to) the wall system when the walls are in the retracted (stored) position. Color selection of finish by Lessee.

13.8 Furnish and install a 20-lineal foot glazed wall system in aluminum frames to segregate an area in the public lobby [Freedom of Information Area], with bottom at 6" a.f.f. and extending up to within 12" of the acoustic ceiling. Provide suitable structural reinforcement above the acoustic ceiling. Glazed sections: 48" wide. Glazing: clear. Frame finish: match building color standard.

13.9 The raised floor system shall meet the below performance standard description:

The access floor system shall consist of interchangeable panels, understructure, and all labor, material, equipment, and installation as called for in these specifications.

A. Related Work Specified Elsewhere:

1. Concrete work and concrete floor sealer is specified in Section 03300. Concrete sealer and pedestal adhesive must be chemically compatible with each other.

2. Carpet and carpet tile work as specified in Division 9.

3. Mechanical air distribution as specified in Division 15.

4. Electrical connections and grounding as specified in Division 16.

13.10 Environmental Conditions for Storage and Installation.

A. The Lessor must provide a dry accessible area to receive and unload material with a free path to elevators, hoists, and/or the area receiving the access floor.

B. Prior to and during installation, a secure and dry storage space closed to the weather must be made available for the access floor materials, with recommended environment at 40°F to 90°F and approx. 35% to 70% relative humidity, 24 hours a day during and after installation.

C. The subfloor surface must be free of moisture, dust, dirt and other debris. Once installed, the access floor must be maintained in the same manner.

13.11 Design Performance and Certification of Product

A. Provide access flooring system consisting of moveable assemblies composed of modular floor panels supported on pedestals forming accessible under floor cavities to accommodate electrical, mechanical, and HVAC services and complying with performance requirements specified. Raised floor panels must be interchangeable with each other except where cut for special conditions.

B. Where applicable, load testing shall be performed according to “Recommended Test Procedures for Access Flooring” as established by CISCA. These procedures shall be used as a guideline when presenting load performance product information.

C. Product test shall be witnessed and certified by an accredited independent engineering and testing laboratory based in the U.S.A. with a minimum of 5 years experience testing access floor components in accordance with CISCA test methods.

13.12 Country of Origin: Access floor materials shall comply with the provisions outlined in FAR Subpart 25.2–Buy American Act–Construction Materials.

13.13 Submittals

A. Samples: Submit a sample of the floor panel and each understructure component.

Shop Drawings:

Submit drawings showing raised floor panel layout including starting point of installation.

Include details of component panels and pedestals. If required show edge details of ramps, steps, handrails and anchoring of pedestal bases to subfloor.

Certificates:

Submit independent testing organization certificates indicating compliance with specified design criteria when tested and reported according to CISCA “Recommended Test Procedures for Access Floors.”

Submit seismic calculations if required in accordance with local and state building codes as specified. Calculations shall be performed using a current seismic program and submitted to a local structural engineer licensed in the Michigan. The structural engineer shall sign and seal these calculations

confirming that these calculations meet all local and state codes for seismic pedestal assemblies. A signed copy of these calculations must be given to the architect and local building department as required.

13.14 Quality Assurance

A. Installer: A company with minimum of 5 years experience in the installation of access floor systems of comparable size and complexity.

B. Tolerances:

1. Manufacturing tolerance:
Nominal panel size: ± 0.015" (.4mm) or less.
Panel flatness: ± 0.020" (.5mm) or less.
Panel squareness: ± 0.015" (.4mm) or less.
Panel interchangeability: all panels, except those modified to meet special conditions, shall be interchangeable.

2. Installation Tolerance: Finished installation shall be level within ± 0.060" (2mm) in 10 feet (3m) and ± 0.100" (3mm) for the entire floor.

13.15 Project Conditions

A. The Lessor shall provide a clean, level, dry subfloor, temperature controlled, and protected from the weather.

B. Access flooring storage and installation areas shall be maintained at a temperature between 40°F to 90°F and between 35% and 70% relative humidity for 24 hours a day before, during and after installation.

PRODUCTS

13.16 Materials

A. Manufacturer: The access flooring system shall be as manufactured by Haworth, Inc. located in Holland, MI, or of equivalent performance by other manufacturers.

1. Substitutions will be considered, providing design criteria is met or exceeded.

B. Floor Panels: TecCrete1250 Panels shall be integrated steel pan construction with exposed top surface of lightweight concrete fill. Floor Panels are bare corner-lock.

1. Panels shall be nominal 24” (610mm) square × 1-1/8” (29mm) deep, manufactured with hot-dip galvanized steel pan having shear tabs that integrally bond to the lightweight, high-strength concrete fill. Panel corners shall be manufactured to receive the pedestal head positioning dome and containing a corner-lock/grounding insert. Each panel shall accept a flush-fit metal fastener which securely fastens each panel corner to the pedestal head.

2. Panel Finish: Floor panel surface shall be factory standard bare concrete for field installed carpet tile. Panels shall have a maximum electrical resistance of 10 ohms or less from the top edge of the panel, less surface covering, to the understructure.

3. Concentrated Load: 1,250 lb. on one square inch (25mm) at any location with a top surface

deflection not to exceed .010" (3mm), and a permanent set not to exceed .010” (3mm).

4. Uniform Load: 400 lb. per square foot with a maximum top surface deflection not to exceed .040" (10mm), and a permanent set not to exceed .010" (3mm).

5. Ultimate Load: 1800 lb. per square inch minimum at weakest point.

6. Rolling Load: Panels shall withstand a rolling load of 1,200 lbs. applied through a 3" (76mm) dia. × 1-13/16" (46mm) wide caster for 10 cycles over the same path with a maximum of .020” (.5mm) top surface permanent set. Panels shall withstand a rolling load of 800 lb. applied through a hard rubber-surfaced wheel 6” (152mm) dia. × 2” (51mm) wide for 10,000 cycles over the same path with a maximum of .040” (10mm) top surface permanent set.

7. Impact Load: A 150 lb. load dropped from 36" (914mm) onto a one inch square indenter shall not cause a system failure.

8. The Lessee anticipates installing a 16' × 40' condensed filing system on a portion of the raised floor, and when fully loaded shall have weight characteristics as below:

System Weight Summary Report		
Total media weight		80,325.00 lbs
Total equipment weight		18,245.00 lbs
Total aisle weight (15 lbs / ft²)		3,690.19 lbs
Total system (media, equipment and aisle) weight		102,260.19 lbs
Total foot-print area		746.36 ft²
Total weight load per square foot (average unit load)		***137.01 lbs / ft²***
Weight load (line load) under front rail	29,434.30 lbs	717.91 lbs / ft
Weight load (line load) under rail № 2	37,868.40 lbs	923.62 lbs / ft
Weight load (line load) under back rail	28,573.22 lbs	696.91 lbs / ft

9. Heat Transmission: Bottom surface temperature exposure to 1,600°F for 15 minutes shall not increase the top surface temperature more than 150 degrees above the ambient temperature.

10. ASTM E-84: Class 1: Flame spread of 5 or less and smoke developed of 10 or less per NFPA.

C. Air Supply Panels:

1. Provide and install passive floor diffusers with factory cutouts to provide event temperatures on the floor.

2. Factory cut-outs shall be centered on the quadrant. Panels with cutouts that are located in traffic areas shall have extra pedestal assemblies under the panel to support the cutout.

3. For under floor air applications, provide air strip gaskets for exposed concrete panels, or high pressure air highways, as indicated.

D. Understructure:

1. Pedestal assemblies shall be of hot-dip galvanized steel.

2. The base shall be a minimum of 16 square inches and shall be stamped and/or embossed on its underside and shall be adhered to the sub floor with an adhesive recommended by the access flooring

manufacturer.

3. Where mechanical anchors are required for seismic zones, provide same as required by project specific seismic calculations.

4. The threaded stud shall be ¾" (19mm) diameter steel.

5. The head assembly shall be designed so that the panels will be held in place with or without corner-lock fasteners.

6. Pedestal assembly shall provide an adjustment range of +/- 1” (25mm) when finished floor height is 6” (152mm) or more, adjustable at 1/64" (.4mm) increments.

7. The assembly shall provide a mechanical means to lock the floor in a level plane and adjustments shall be capable of being made without special tools.

8. For corner-lock system, the head of the all-steel assembly shall be designed to accept a metal fastener to mechanically lock the panels in place.

9. Pedestal assembly shall support not less than 6,000 lb. axial load and shall resist an average 1,000 inch-pound overturning moment when bonded to a clean concrete slab.

E. Accessories: Furnish ramps, steps, lateral bracing, fascia, handrails, cutouts and miscellaneous items where indicated.

EXECUTION

13.17 Inspection: Examine the subfloor which is to receive access flooring for dryness, cleanliness, unevenness, or any irregularities that will affect the quality of the access flooring. Verify that material storage and installation areas are at recommended temperature and relative humidity before, during, and after installation. Verify that substrate is level to within 1/8” (3mm) in 10 feet (3m). Do not commence installation of access flooring until the subfloor is clean and dry, temperature controlled, and protected from the weather.

13.18 Installation

A. Pedestal locations shall be established from approved shop drawings so that mechanical and electrical work can be installed without interfering with pedestal locations.

B. Installer is to coordinate with other trades to maintain the integrity of the installed access flooring. All traffic on access floor shall be controlled by the installer only. No traffic other than the access floor installation crew shall be permitted on any floor area for 48 hours to allow the pedestal adhesive to set. Access floor panels shall not be removed by other trades for 72 hours after their installation.

C. Floor system and accessories shall be installed by an authorized factory trained installation company with a minimum of 5 years experience.

D. No dust or debris producing operations by other trades shall be allowed in areas where access floor is being installed to ensure proper bonding of pedestals to subfloor.

E. Installer shall keep the subfloor broom clean as installation progresses.

F. Install floor diffusers if required as indicated on Mechanical Plans.

G. Finished installation shall be level within +/- 0.060” (2mm) in 10 feet (3m) and +/- 0.100” (3mm) for the entire floor area.

H. Replace damaged materials prior to the application of field applied surfaces.

13.19 Field Quality Control: Take random panel from shipment received at construction site and test panel for compliance with stated load criteria if directed by the Lessor.

13.20 Acceptance: The Lessor shall accept the completed access floor in whole or in part, prior to allowing other trades to perform work which affects the installed access floor. The Lessor shall suitably protect the accepted access floor and accessories from damage, contamination or overloading.

DIVISION 14 - CONVEYING SYSTEMS

14.1 Vertical transportation within the building (if more than 1-story above or below grade) shall be provided by not less than 1 passenger and 1 freight elevator with access to all floors. Service shall be non-proprietary and available in the local area by skilled technicians. All permits, fees, and maintenance shall be provided by the Lessor.

The elevator equipment shall be furnished and installed in accordance with ASME/ANSI A17.1 Safety Code for Elevators and Escalators, including latest supplement; and the Michigan Elevator Code most recent edition. Elevator controls and operations shall also be in conformance with MBC and the ADA requirements. The most stringent provision of a code shall prevail in the event of a conflict.

Elevator design criteria shall include the following:

A) Elevator unit shall be Otis Model LHM2100L or approved equal, electric hydraulic operation. Manufacturer shall certify that elevator complies with all applicable MBC requirements and laws of the State of Michigan and the ADA requirements. Where conflicts exist, the most stringent code/guidelines shall prevail.
B) Passenger car capacity: 3,500 lb, 100 fpm minimum. Normal passenger load per trip 19 average (approximately 80% of car capacity). Freight car capacity: 4,000 lb.
C) Operation: simplex - selective collective. Elevator shall be automatically self-leveling.
D) Controls shall be microprocessor type.
E) deleted.
F) Power supply: 3 phase, 60 hz.
G) Passenger car enclosure shall be standard LHM cab, type H2 with plastic laminate panels and stainless steel cab front and doors. Laminate color as selected by Architect/Engineer from manufacturers standard colors. Cab shall have back and side handrails. Inside dimensions of cab shall be minimum 6’-2” wide by 4’-7”deep. Doors at hoist way entrance shall be white primed baked enamel finish with field applied final finish as selected by Architect/Engineer.
H) Freight car enclosure shall be standard LHM cab, type H2 with plastic laminate panels and stainless steel cab front and doors. Laminate color as selected by Architect/Engineer from manufacturers standard colors. Cab shall have back and side handrails. Inside dimensions of the freight cab shall have 1 horizontal dimension not less than 8'-6". Interior cab height shall be not less than 9'-0" high. Doors at hoist way entrance shall be white primed baked enamel finish with field applied final finish as selected by Architect/Engineer. Provide mounting points for removable padding, which shall be supplied by the Lessor.
I) Doors shall be power operated. Doors shall be single-speed horizontal right hand slide. Passenger hoist way opening shall be a minimum of 3’-0” × 7’-0” clear.

J) Car operating panel shall be mounted on front wall adjacent to door. Panel shall be mounted such that floor control buttons are not higher than 48" a.f.f. Control buttons shall be a minimum dimension of 1" and shall be accompanied by raised characters and Braille designations.

K) Hoist way entrances shall be equipped with floor designations in raised characters (2" min height) and Braille on both jambs and centered 60" a.f.f. Hall signals shall be both visual and audible, indicating the direction of travel.

L) Elevators shall be equipped for a 2-way communication system. Lessor shall furnish the handset.

M) Minimum handling capacity: 12% to 14% of building population in 5 minutes.

N) Interval time: 25-30 seconds average departure time of cars from the ground floor lobby; 15-18 seconds during peak traffic periods.

DIVISION 15 - MECHANICAL

15.1 Heating, ventilating and air conditioning shall be designed as a displacement system as opposed to a mixing system. Design objective: a) Mixing of supply and room air in the lower level of the occupied space, b) Managed stratification from just below the respiratory level to the ceiling, resulting in a displacement ventilation strategy in the upper portion of the occupied space. Utilize the cavity created by the raised access floor and the structural slab as a pressurized supply air plenum.

Utilities serving the Garage / Storage area of the building shall be separately metered from the office portion of the building.

General Office Area:

Install a permanent carbon dioxide (CO_2) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments. Refer to ASHRAE 62-2001, Appendix D.

The building shall be equipped with a combination heating, ventilation and air conditioning system. The space above the ceiling shall be used as a return plenum. The systems shall be sized in accordance with the weather conditions identified in the current MBC.

All HVAC equipment shall be commercial or light industrial grade.

A permanent temperature and humidity monitoring system will be installed that provides the Lessee control over thermal comfort performance and the effectiveness of humidification and/or dehumidification systems in the building.

The HVAC system shall be zoned, with units sized and placed as required by heating and cooling loads on the building. Zoning of systems is dependent on the size, shape and orientation of the building. The perimeter heating system shall be divided into a minimum of 4 independent temperature and control zones. The HVAC system shall be divided into a minimum of 4 exterior and 1 interior temperature control zones. Return air shall be taken from the area supplied or adjacent to the area in the same temperature control zone.

The ventilation and exhaust system shall be sized to maintain a positive pressure throughout the building envelope to limit air and dust infiltration.

For mechanically ventilated buildings, design a ventilation system that will result in an air change effectiveness greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces, demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.

No HVAC ductwork shall be installed under the floor slab or underground.

Garage / Storage area: This area shall be served with conditioned air and/or hot water baseboard radiant heat as referenced in Division 13, with utilities (electric, natural gas, and water) to this area separately metered.

15.2 HVAC Heating and Reheat System:

Variations in temperature within each control zone, and between zones, shall not exceed 4^{o}F, with the temperature measured from a reference point 1' inside of any exterior wall to the center of the building. The temperature variation from the floor to a height of 30" for any employee work station (either conventional desk or systems furnishings) shall not exceed 2^{o}F. Testing shall be made when the exterior temperature has reached a daily low of 20^{o}F or more for 2 consecutive days.

Controls of the perimeter heating system shall be coordinated with the HVAC heating and reheat system.

15.3 Ventilation and Exhaust System

General: The space above the ceiling shall be used as a return air plenum.

Design Conditions:

Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999. Ventilation for Acceptable Indoor Air Quality, and approved Addenda using the Ventilation Rate Procedure.

Pressurization

The ventilation and exhaust system shall be designed and controlled to provide the necessary quantity of outside air to maintain indoor air quality, to satisfy the combustion air requirements, and exhaust requirements in restrooms, while maintaining a positive pressure (0.01" to 0.02" water column) within the building.

Ventilation

Ventilation requirements shall meet the minimum specifications contained in the MBC for the occupancy areas. The following values shall be considered a minimum acceptable level:

A)	General Office	20 cfm per person, or 0.2 cfm per square foot of occupied floor (whichever is greater)
B)	Break room	30 cfm per person
C)	Mud Room Shower	30 cfm.

Outside air and recirculation

Not more than 67% of the ventilation air shall be recirculated. The remaining 33% or 5 cfm per person shall be fresh outside air.

Exhaust air

Exhaust air from server room, break room, mud room shower, and restrooms shall meet the minimum specifications contained in the MBC for the occupancy areas.

The exhaust system (hood, motor, squirrel cage or fan blades, wiring, switches, filters, and ducting to the

outdoors) in the laboratory shall anticipate fumes or vapors created by the use of a diluted nitric acid solution [90% water, 10% nitric acid], and create a negative pressure within the laboratory room when the hood is manually turned on. The exhaust hood shall be installed over 1 of the 2-compartment sinks, and extend laterally 4' to one side of the sink.

Ductwork:
Fabricate ductwork from a minimum 24 gauge zinc-coated (galvanized) steel, lock-forming quality sheets conforming to ASTM A527. Zinc coating thickness: “Commercial” Class G90, except a minimum of 2 oz. per sq. ft. where the metal is exposed to the weather. Laboratory ductwork shall withstand the effects of the laboratory nitric acid solution.

Ductwork shall be constructed in accordance with SMACNA “HVAC Duct Construction Standards - Metal and Flexible”, First Edition, 1985.

Insulate concealed ductwork with Owens Corning all service duct wrap type 100 with FRK vapor barrier facing or foil backing. Insulate exposed ductwork with rigid board insulation over mechanical fasteners. Insulation shall meet UL-181. Duct insulation shall be installed on all ductwork in unconditioned spaces, and outside air ducts between the louver and air handling unit.

The flexible ductwork and assemblies shall meet the Class 1 requirements of NFPA 90A and 90B, and labeled by UL with a flame spread of 25 or less and a smoke development rating of 50 or less, in compliance with UL-181. Flexible ducts shall be limited to a maximum length of 5' and no section over 24” shall be unsupported.

Duct Accessories:

Fire dampers shall be installed in all required locations.

Return diffusers shall be of the following type and sized to meet demand: 24” × 24” eggcrate return diffusers, for grid type ceiling.

Air supply into the office area from the underfloor air distribution system shall be via high induction occupant-controlled floor diffusers, as manufactured by Trox USA, Inc., "FB Series" or equivalent performing product.

Ventilation Controls:

Minimum outside air volumes shall be maintained at all times with minimum limits on outside air dampers.

Enthalpy based economizer controls shall be included to provide free cooling during the spring and fall.

Continuous air circulation and exhaust shall be provided during occupied hours.

Exhaust systems for the toilet rooms and mud room shower, shall be controlled on a 7-day, 24-hour adjustable timer. Janitor closet exhaust systems shall be on a separate a 7-day, 24-hour adjustable timer. The exhaust system from the server room shall be switched separately from lighting.

15.4 Air Conditioning System:

General:

The space above the ceiling shall be used as a return air plenum.

Each employee in the building will have a personal computer (CPU and monitor). There may also be peripheral equipment such as printers and scanners. The heat generated by this equipment shall be included in the cooling system design calculation. A value of 1,500 BTU's per person shall be used in the design of the HVAC system.

1 room of the Leased premises will house computer network "server" equipment which will generate sufficient heat to require a supplemental cooling system to serve this room alone. If situated against an exterior wall, it shall have heat exhausted to the outdoors horizontally.

Cooling system can utilize either DX or chilled water system. The condenser sections for either system shall be air cooled, and sized to reject the maximum heat load with outside air temperatures identified the MBC.

Design Conditions:

The HVAC for conditioning system shall be capable of maintaining temperatures in the range of 68°F and 78°F, and dehumidify in summer and humidify in winter to maintain a relative humidity in a range between 30% and 50% depending upon the season. Comply with ASHRAE Standard 55-1992, Addenda 1995, for thermal comfort standards including humidity control within established ranges per climate zone.

Ductwork:

Fabricate ductwork from a minimum 24 gauge zinc-coated (galvanized) steel, lock-forming quality sheets conforming to ASTM A527. Zinc coating thickness: "Commercial" class G90, except a minimum of 2 oz. per sq. ft. where the metal is exposed to the weather.

Ductwork shall be constructed in accordance with SMACNA "HVAC Duct Construction Standards - Metal and Flexible", First Edition, 1985.

Insulate concealed ductwork with Owens Corning all service duct wrap type 100 with FRK vapor barrier facing or foil backing. Insulate exposed ductwork with rigid board insulation over mechanical fasteners. Insulation shall meet UL-181. Duct insulation shall be installed on all ductwork in unconditioned spaces, and outside air ducts between the louver and air handling unit.

Flexible ductwork and assemblies shall meet the Class 1 requirements of NFPA 90A and 90B, and labeled by UL with a flame spread of 25 or less and a smoke development rating of 50 or less, in compliance with UL-181. Flexible ducts shall be limited to a maximum length of 5' and no section over 24" shall be unsupported.

Duct Accessories

Fire dampers shall be installed in all required locations.

Return diffusers shall be of the following type and sized to meet demand: 24" × 24" eggcrate return diffusers, for grid type ceiling.

Air supply into the office area from the underfloor air distribution system shall be via high induction occupant-controlled floor diffusers, as manufactured by Trox USA, Inc., "FB Series" or equivalent performing product.

Temperature Controls:

Variations in temperature within each control zone, and between zones, shall not exceed 4°F, with the temperature measured from a reference point 1' inside of any exterior wall to the center of the building. The

temperature variation from the floor to a height of 30" for any employee work station (either conventional desk or systems furnishings) shall not exceed 2°F. Testing shall be made when the exterior temperature has reached a daily peak of 80°F or more for 2 consecutive days.

15.5 Humidity Control System:

Design Conditions:

Season	% relative humidity range
Winter	25% - 35% (reduce to 20% when outside temperatures below 20°F)
Spring/Fall	30% - 50%
Summer	30% - 50%

Humidification supply water shall be from a self-contained reverse osmosis system of the size and capacity required. Run 1 separate reverse osmosis water line to 1 laboratory sink. Separate humidifiers shall be installed within each of the HVAC temperature control zones. Each humidifier shall include a water filter cartridge, pressure regulating valve, and solenoid valves on the supply and drain lines. The humidifier shall be similar to Nortec Industries “MP” Series.

Water supply and drain piping shall be type “L” copper and insulated with “Arma-Flex” 1” nominal wall thickness closed cell foam insulation. Supply piping to the humidifier shall be a minimum ½” diameter, drain pipe shall be sized in accordance with manufacturer’s recommendation.

15.6 All plumbing and drainage system supply pipes, fixtures, and drains shall be installed according to manufacturer recommendations and local codes. All faucets, valves and fixtures shall be of water-saving design. Domestic water systems shall be constructed of type “L” copper with sectionalization and isolation valves installed at branch connections. Storm and sanitary piping shall be service weight cast iron or PVC. Domestic water and interior roof conductors shall be insulated the entire length for temperature control, prevent condensation, and for sound control. Provide hot and cold water line feeds and drain connections to the following locations: restrooms, janitor closets, and the break room. Restroom lavatories, water closets and urinals shall be white, commercial grade, vitreous china, and shall be installed in accordance with MBC requirements where applicable. Water closets shall be floor mounted, elongated rim, two-piece, pressure-assist, dual-flush, with top spud for flush valve, equal in performance to Mansfield "EcoQuantum" model 148-119. Toilet seats shall be white, heavy duty, solid plastic open at the front and coverless. Seats shall have stainless steel hinges and built-in bumpers similar to American Standard “Royal” (0039375). Urinals shall be wall-mounted and waterless equal in performance to Sloan "Waterfree" model WES-1000. Restroom lavatories shall be set in continuous “roll-under” vanity tops with preformed backsplash and be self rimming, white vitreous china no smaller than Kohler "Pennington" countertop lavatory model K-2196. Restroom lavatories shall be equipped with chrome plated, heavy-duty, commercial grade, touchless single control faucets similar to Sloan "Optima Plus" battery-powered hand washing faucet, model EBF-85. Each lavatory shall be equipped with a polished chrome “grid drain” tailpiece for vitreous china similar to American Standard (2411.015) and (7723.018) “offset grid drain” for wheelchair lavatories. The break room sink shall be handicapped accessible (apply the residential standard). The break room sink shall be self rimming, 20 gauge stainless steel with double basins of equal size similar to Moen “Sani-Sink” (22114). Overall sink size shall be approximately 24” long × 21” wide × 7” deep. Faucet set for break room shall be chrome plated, heavy-duty, commercial grade tall gooseneck, single control faucets with spray similar to American Standard “Reliant” (4205.600). Break room sink shall be equipped with an “In-Sink-Erator” commercial quality 2 hp garbage disposal with sound insulation, lifetime lubricated bearings, and stainless steel impellers, grinding chamber and shredder. Mixing controls for employee shower shall be Delta 11T5153.

Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR treat 100% of wastewater on site to tertiary standards.

Provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

Where chemical use occurs (including housekeeping areas and copying/ printing rooms), provide segregated areas with deck to deck partitions with separate outside exhaust at a rate of at least 0.50 cubic feet per minute per square foot, no air re-circulation and maintaining a negative pressure of at least 7 PA (0.03 inches of water gauge).

Provide a minimum of 2 electric water cooler and drinking fountain combination units per floor, if multiple floors, with 1 to be located adjacent to the restrooms. Additional units shall be provided as required by local codes. Each unit shall be MBC and ADA compliant, similar to Halsey Taylor model BCF-7F. Housing and bowl shall be satin finish stainless steel.

Hot water heater shall be natural gas supplied tankless by Takagi "Mobius" model T-M1, or provide equivalent tankless performance. Hot water delivery to breakroom, restrooms, laboratory, showers, and janitor closet shall be via a recirculating system. Hot water recirculating pump equivalent to Grundfos "Series UP" model 26-96F with timer.

In new construction or existing construction over 30,000 square feet, provide a floor level service sink in 1 janitor closet per floor, which shall be enameled cast iron, approximately 20” long × 16” wide × 10” deep similar to American Standard Akron (7696.016). Faucets for the service sink shall be commercial grade, heavy cast brass, chrome finish, with anti-siphon device, threaded spout for hose, and a pail hook similar to American Standard Faucet № 8344.111.

In new construction provide floor drains in each restroom, and as required by local codes.

Floor drains in occupied space shall have nickel bronze finish, heel proof grid top with automatic trip primer. Coordinate type of cover with specific floor covering. Floor drains in occupied spaces shall be similar to Zurn model Z-415. Floor drains in unoccupied spaces shall be similar to Zurn model Z-507-5.

Cleanouts for roof conductors and drain pipe shall have cleanouts installed at changes in direction and along their length as required by local codes and good engineering practice. The cleanouts located in occupied spaces shall have decorative cover or located behind removable covers. Cleanouts and decorative covers shall be similar to Zurn model Z-1400.2. Coordinate type of cover with specific wall and floor covering.

In addition to the MBC-required minimum number of restroom fixtures for employees, provide 1 extra water closet in each employee restroom. Provide 2 single-fixture A.D.A.-compliant restrooms [male / female] adjacent to the main entry lobby area for public use, separate from the employee count in building fixture total.

In addition to the MBC-required minimum number of restroom fixtures for employees, provide 1 single-fixture A.D.A.-compliant unisex restroom at the Garage / Storage area for employee use only.

The environmental laboratory shall be equipped with 2 2-compartment deep-well sinks made of solid epoxy resin, with epoxy resin countertop, 18" high backsplash of the same material, and extending laterally 2' on either side of each sink pair. Sinks shall be capable of withstanding uses of a nitric acid solution [90% water + 10% nitric acid].

Each environmental laboratory sink shall be provided with a tall goose-neck fixture with paddle handles. One of the sink pairs shall be supplied with a separate water supply that has passed through reverse osmosis treatment and that can supply up to 3 gallons per draw up to 3 times per day.

The environmental laboratory drainage fixtures, piping, and connections shall be of suitable material to withstand the nitric acid solution used by tenant.

Due to the Lessee's use of a diluted nitric acid solution [90% tap water, 10% nitric acid] in the laboratory, an acid neutralization tank shall be mounted at the floor on the drain side of one of the laboratory sinks, prior to the solution entering the public sanitary sewer system. Provide a Zurn model Z9ADT1 acid neutralization tank or equivalent, with either marble chips or limestone chips as the medium to neutralize the waste water, and 1½″ tapping. Acid neutralization tank shall be installed to allow easy access to open the container and replace the chips medium.

The environmental laboratory shall be equipped with an emergency safety shower and eyewash station (with floor drain) equivalent to Guardian Equipment model G1902P-SC, and per ANSI standard. Cold water supply 1¼". Placement of the emergency shower shall be in accordance with nationally recognized laboratory safety protocols.

15.7 Temperature Control System

Temperature control system shall be DDC.

The overall system shall provide automatic energy management including but not be limited to such features as automatic setback for nights, weekends and holidays, and automatic variable outside air ratio dampers for economizer or enthalpy control.

Thermostat controls shall be located in a locked cabinet in the mechanical room and connected to remote sensors distributed throughout the Leased premises.

Humidistats shall be located throughout the Leased premises and provided with locking covers, or located in the return air plenum of the HVAC system.

15.8 Testing and balancing mechanical systems: Independent air and hydronic system balancing tests shall be performed by certified testing firms. Results of these tests shall be submitted to the Lessee as a condition of final acceptance of the Leased premises. Random testing may be required during acceptance inspection.

15.9 Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows: A) during construction meet or exceed the recommended Design Approaches of SMACNA IAQ Guideline for Occupied Buildings under Construction, 1995, Chapter 3; B) protect stored on-site or installed absorptive materials from moisture damage; C) if air handlers must be used during construction, filtration media with a MERV of 8 must be used at each return air grill, as determined by ASHRAE 52.2-1999; and D) replace all filtration media immediately prior to occupancy. Filtration media shall have a MERV of 13, as determined by ASHRAE 52.2-1999 for media installed at the end of construction.

15.10 After construction ends, implement an IAQ that either: a) Flushes out the building for 2 weeks prior to occupancy with a MERV 13 filtration media at 100% outside air (after the flush out, replace the filtration media with new MERV 13 filtration media, except the filters solely processing outside air), or b) Conducts a baseline indoor air quality testing procedure consistent with the U.S. EPA's current Protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445.

DIVISION 16 - ELECTRICAL

16.1 Complete shop drawings and manufacturer's catalog data shall be submitted to the Lessee and approved by the Lessee prior to start of any construction work. Power and lighting panel configuration shall be complete with schedule of branch panels, separate disconnects, and circuit breakers, based on calculated and estimated motor, resistive and lighting loads. All circuits shall be labeled at the panel and at the underfloor outlet for future reference.

Location of all electrical receptacles and telephone outlets (including power risers for the systems furnishings) shall be designated on a floor plan showing the systems furnishings layout provided by the Lessee. Said floor plan shall be delivered to the Lessor no later than 6 weeks after the approved construction plans are received by the Lessee.

Utilities serving the Garage / Storage area shall be separately metered from the office portion of the building.

16.2 Electrical service for new construction or a renovated existing building shall be 480/277-volt, 3-phase, 4-wire or approved equal. Service shall be sized for HVAC and other mechanical systems loads, lighting, general building services, and dedicated computer based office equipment loads. 5 watts per square foot shall be provided for lighting and general service receptacles and 5 watts per square foot shall be provided for computer based office equipment. Size of neutral conductor of 3-phase circuits shall be twice that of phase conductor to accommodate potential harmonic currents associated with computer system electronic power supplies and fluorescent lighting fixtures electronic ballasts.

An adequately sized 3-phase "wye" wound step down transformer shall be provided to supply 208/120-volt, 3-phase power, for lighting, general service receptacles and dedicated computer based office equipment.

Dedicated, isolated ground circuits shall be supplied from separate isolated ground power distribution panels. General service receptacles shall be supplied from separate receptacle power distribution panels. Lighting circuits shall be supplied from separate lighting panels. Panels shall have 20% spare capacity and be complete with 10% spare breakers of each size, but no less than 1 spare.

No more than 4 duplex receptacles shall be connected to any single 20-amp dedicated isolated ground circuit or general service circuit.

16.3 The building's main electrical service shall be equipped with a transient voltage surge suppressor ahead of the distribution panels. The surge suppressor shall be either an Atlantic Scientific Corp "Zonemaster" model ZMS140-E or ZMS140-F, or an approved equal, appropriately sized for the anticipated building load.

16.4 Each employee office constructed of gypsum drywall board shall be equipped with a minimum of 4 standard 120-volt 20-amp duplex receptacles supplied by a 20-amp general service circuit.

Each grouping of 4 employee cubicles (or less) constructed with systems furnishings (supplied and installed by the Lessee) shall receive power by: Lessee-supplied base feed power conduits (by Electri-Flex Co., a liquid-tight conduit LL18858, type LA, sized 2" ID, containing 8 12-AWG conductors), connected by the Lessor, between the bottom of the systems furnishings wall panel and the underfloor wiring raceway. The Lessor shall furnish all connecting hardware (elbows, wire nuts, junction boxes, etc.) to complete the connection.

The lunch room shall be provided with extra duplex receptacles to power up to 4 employee-supplied refrigerators, 4 microwave ovens, 2 coffee makers, and up to 3 soft drink vending machines.

Each voice and data room shall be provided with a minimum of 4 120-volt 20-amp quadplex receptacles per

wall, mounted at 48" a.f.f. Conduit may be exposed.

16.5 Provide 1 220-volt electrical receptacle per floor level, where designated by the Lessee, for operation of a high-speed large-capacity photocopier.

16.6 In the Garage / Storage areas provide:

a) Wildlife area (Division 13.2) convenience duplex electrical power @ 48" a.f.f. every 20' around perimeter of this enclosed area.

b) Fisheries area (Division 13.3a) convenience duplex electrical power @ 48" a.f.f. every 15' around perimeter of this enclosed area.

c) Fisheries area (Division 13.3b) convenience duplex electrical power @ 48" a.f.f. every 20' around perimeter of this enclosed area, and two 220-volt receptacles on opposite walls. Separate electrical power to the dust collection system. Separate power to the fume exhaust hood. Separate power to the Air compressor located in this room (air compressor n.i.c.).

d) Fisheries area (Division 13.3c) convenience duplex electrical power @ 48" a.f.f. every 20' around perimeter of this enclosed area, and two 220-volt receptacles on opposite walls.

e) Fisheries area (Division 13.3d) convenience duplex electrical power @ 48" a.f.f. every 20' around perimeter of this enclosed area, and two 220-volt receptacles on opposite walls.

f) Law enforcement area (Division 13.4) convenience duplex electrical power @ 48" a.f.f. every 10' around perimeter of this enclosed area.

16.7 Provide an electric strike release assembly at the lobby door separating the waiting area from the office area. Strike release switch shall be mounted beneath the work surface of each of the two receptionist cubicles.

16.8 Electrical distribution for convenience power for open office areas shall be through modular "plug-and-play" power zones beneath the raised floor, to make a connection to the Lessee-supplied systems furnishings. Each furnishings connection requires 8 conductors to be compatible with the systems furnishings (3-hot, 3-neutral, 1-common ground, and 1-isolated ground), served by 3 15-amp or 3 20-amp breakers at the panel. Wiring will be verified by Lessee. Not allowed: 3-hot, 1-neutral, 1-ground. *Wiring will be verified by Lessee*.

16.9 Underfloor modular "plug-and-play" zone distribution boxes, armored cable, extender cables, circuit distribution junctions, junction boxes, and floor-mounted service modules shall be supplied by the Lessor and installed by the Lessor. Snap-together connection of power drops (i.e. direct and complete connection to the systems furnishings) shall be the responsibility of the Lessor. The Lessor shall be responsible for cutting of raised floor square sections to fit floor-mounted service modules.

16.10 Each enclosed drywall office, hearing room, lobby area, FOIA area, and conference room shall be equipped with 120-volt 20-amp duplex receptacles every 10 feet along each wall, with a minimum of 1 on each wall, and a minimum of 4 total in the room. All other walls shall have duplex receptacles at 12’-0” o.c.

Office space lighting levels shall be in accordance with the latest recommendations of the Society of Illuminating Engineers, or a minimum maintained lighting intensity of 50 FC at desktop level, which ever is greater. Voice and data rooms shall be a minimum of 100 FC. Task lighting that is a part of the systems furnishings shall not be used to satisfy specified levels for general lighting.

Garage / Storage areas lighting levels shall be in accordance with the latest recommendations of the Society of Illuminating Engineers.

Provide exit lighting as required by code. Exit signs shall be LUMINEXIT model B100-IF-R-20 self-luminous by Branhurst Corp., or approved equal.

Provide battery operated rechargeable automatic emergency egress lighting in interior of Leased premises to adequately light all exit areas, stairs, hazardous areas, or other occupied areas.

Task-lighting will be incorporated into the systems furnishings. Task-lighting fixtures will be provided by the Lessee. Installation will be coordinated with the work being performed by the Lessor during construction.

Lighting for each room and office shall be switched individually at the room entrance. Light switching in open areas shall be zoned such that no zone exceeds 1,000 square feet. **Zones shall separate areas, such as perimeter lighting from interior area lights so perimeter lights can be shut off manually or by sensor when there is adequate daylight. Zoned lighting shall include conference room light over-rides for presentations.** The zoned lighting shall be computer controlled with automatic evening shut-off option for energy savings. Manual switch overrides will be provided for staff entering the building at non-business hours. The overrides shall be timed to turn off at up to 60-minute intervals.

Suitable lighting shall be provided over all lavatory and vanity counters. Restroom lighting shall be controlled by motion sensors for energy savings.

16.11 Ceiling artificial illumination shall be suspended fixtures utilizing T5HO fluorescent tubes, equal to 3-tube Finelite Series 12. Ballasts shall be parallel wired to prevent loss of light from other fixtures when 1 tube fails.

Construction: 20 gauge die-formed steel body with 14 gauge die-formed internal joiner system, plug-together wiring standard. All components hard tooled to tolerances of 0.005". Precision-punched 0.093" diameter perforations cover the bottom side if the fixture in 2 parallel columns.

Endcaps: Flat endcaps, 20 gauge die-formed steel, which add 0.1" at each end.

Reflectors: Die-formed pre-painted aluminum, 91% reflective white. Virgin acrylic UV stabilized lens diffuser over perforations, with accessory dust covers of clear acrylic.

Electrical: 120 or 277 volt pre-wired. Fixture and electrical components UL/C-UL listed and fixture will bear UL/C-UL labels.

Lamping shall be 3-tube T5HO.

Ballasts shall be electronic instant start low profile, less than 20% THD standard.

Mounting shall be semi-adjustable aircraft cable ± 0.5" in lengths of 12", 15", 18", 21", 24", 27", 30", or 36".

Support cables shall be stainless steel with plated hardware.

Feed shall be 18 gauge straight cord (14 gauge feed cord used when fixture current exceeds 6 amps).

Finish shall be white.

Lengths may be 4', 8', or 12' as illumination standard requires. Fixture weight shall be 2.0 lbs/foot using flat endcaps.

16.12 All restrooms and the mud room shower shall each have 1 120-volt 20-amp GFI duplex outlet at the counter.

16.13 Provide security flood lighting around perimeter of building. Parking lot shall be illuminated to 2 foot candles at the parking surface. All exterior lighting shall be vandal resistant. All exterior lighting shall be controlled by photoelectric light sensing devices. **Meet or provide lower light levels and uniformity ratios than those recommended by the IES Recommended Practice Manual: Lighting for Exterior Environments (RP-33-99). Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Full Cutoff IES classification. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding (collar) such that no light from that luminaire crosses the property boundary.**

16.14 Communication Requirements: The Lessor shall provide space for intrusion alarm equipment, public address system equipment and telephone equipment with necessary power supplies and/or receptacles. Equipment and wiring will be supplied by the Lessee.

The Lessor shall provide street access conduits for communications and/or data circuits, UL rated fire retardant plywood equipment mounting boards, conduits and/or wireways internal to the building, and dedicated 120-volt 20-amp circuit(s) (isolated ground receptacles) served from the isolated ground power distribution panel.

Telephone outlets in masonry walls and fixed partitions shall have ½“ conduit bushed at the top and terminated in a 4” square box with a single gang plaster ring. Supply and install suitable cover plates.

16.15 deleted.

16.16 The Lessee shall have the option to contract for remote alarm system monitoring for the Leased premises. The alarm system will: A)Monitor for intrusion at all grade level exterior openings as well as any openings in the roof top that are accessible by ground ladder, by contact points, infrared, and/or microwave detectors; B) Authorize entry at certain grade level exterior openings, by an electric strike activated by a proximity card which shall fail secure; C) Authorize passage into certain areas on the floor by an electric strike activated by a proximity card which shall fail secure.

The Lessor shall provide perimeter and interior electric strikes, step-up and/or step-down transformers, power supply, concealed conduit for wiring, and otherwise coordinate with the access systems and intrusion alarm system vendor during remodeling.

16.17 The Lessor shall provide and install a CCTV security monitoring system, with digital recording capability of not less than 96 hours. The system shall monitor:

a) The interior lobby from 2 different angles.
b) The FOIA (adjacent to the lobby), from 1 angle.
c) Each rear dock entry point, from 1 interior angle.
d) The main public entry area, from 2 exterior angles.
e) All exterior sides of the building, from 1 angle.

16.18 The CCTV system shall be hardwired [no wireless]. Provide 3 display monitors which shall be monochrome with any of the camera images toggled for displayed splitted to a minimum of 4 images onto the same screen display

16.19 Cameras shall be enclosed in sphere [or ½ sphere], fixed, suitably protected from thermal extremes, and exterior cameras shall be capable of night vision operation.

END OF SPECIFICATIONS

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